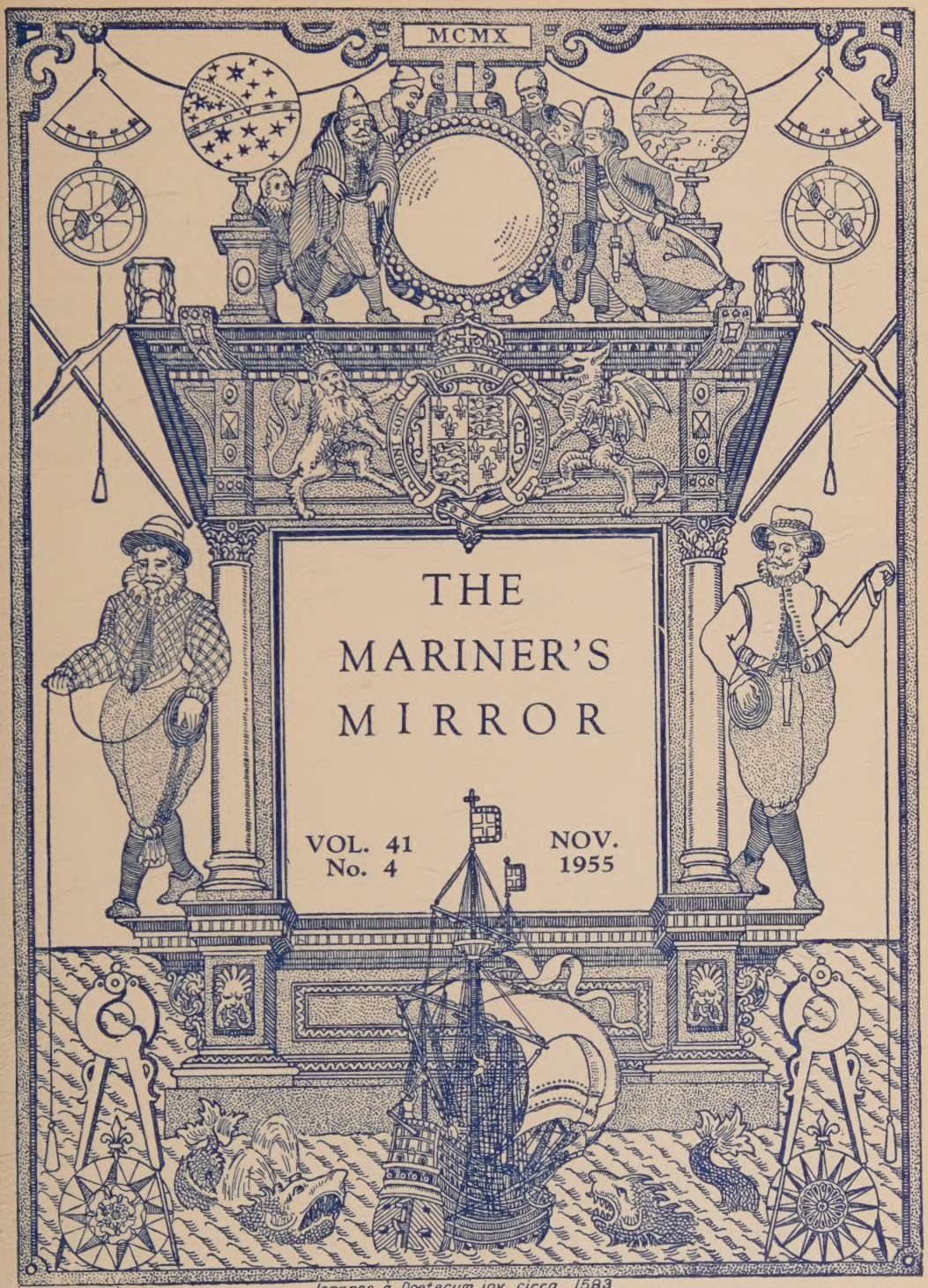
THE QUARTERLY JOURNAL *of the* SOCIETY FOR NAUTICAL RESEARCH



THE MARINER'S MIRROR

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THE SOCIETY FOR NAUTICAL RESEARCH

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To encourage research into nautical antiquities, into matters relating to seafaring and shipbuilding in all ages and among all nations, into the language and customs of the sea, and into other subjects of nautical interest.

The Society has erected a Monument to the Van de Veldes in St James's, Piccadilly, London; raised £107,000 to save Nelson's Flagship and has superintended the restoration of H.M.S. *VICTORY* to her appearance as at the Battle of Trafalgar; paved the way to the establishment of the National Maritime Museum at Greenwich and the *Victory* Museum at Portsmouth; organized exhibitions of Nelson relics and naval prints, etc.; and issued several periodical publications dealing with nautical archaeology, besides an inexpensive set of official plans (ten in number) for building a model of H.M.S. *Victory*.

The annual subscription of one guinea ($3.00) entitles a member to receive *The Mariner's Mirror* and the Annual Report, and a ticket of admission to H.M.S. *Victory*; to attend the Annual Meetings and the Annual Lectures.

For particulars of membership apply to

THE HON. SECRETARY, SOCIETY FOR NAUTICAL RESEARCH,
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CONTRIBUTIONS TO *THE MARINER'S MIRROR*

The aim of the Society being to arrive at true conclusions through free discussion, it is distinctly to be understood that the Editor is not held responsible for statements made in the *Journal*.

Contributions and correspondence should be addressed to G. R. G. WORCESTER, ESQ., *Penny Cottage, Pound Lane, Windlesham, Surrey*. Although not absolutely essential, it would be of great assistance to the Editor and the Printers if articles, notes, queries, answers and reviews of books could be typed, on one side of the paper, preferably quarto, with double-spacing and with a wide margin. Owing to the high costs of production, photographs and line drawings to illustrate contributions must be restricted to a minimum, and very few can be accepted for the present, or until conditions have improved.

Names of ships should be underlined to denote *italics*, and not written within inverted commas.

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The MARINER'S MIRROR

WHEREIN MAY BE DISCOVERED HIS

ART, CRAFT & MYSTERY

after the manner of their use in all ages and among all Nations

VOL. 41. NO. 4 1955

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ANSWERS

REVIEWS

THE BEGINNING OF THE S.N.R.

By Sir Alan H. Moore, Bt.

THE prime mover in the formation of the Society for Nautical Research was Leonard Carr Laughton. The difficulty was to get him to move. It was overcome by a letter from R. Morton Nance. Since it fell to me to bring these two masters of nautical archaeology in contact I propose here to tell how it came about, and what followed.

Though a river may be said to have a particular source, it is in fact the result of the confluence of many streams. So with our Society. The following traces one little trickle without which it would not have been formed when and how it was. This entails a good deal of autobiography, but I think readers would prefer to have the whole story as it affected one who was from the first a partaker in most of the activities that brought the S.N.R. into being.

In 1904 I came down from Cambridge, and in the autumn entered at St Bartholomew's Hospital. At lectures on physiology I sat next to a man called Dudley Macaulay Stone. He noticed, he told me afterwards, that the sailing vessels I drew in my notebook were correct. He was keen on sailing and we became friends.

Stone was not an antiquarian, but in 1904 you need not be one to know what sailing vessels looked like and to recognize the different rigs. Sailing ships still carried passengers from London. Wool carriers with skysail yards could be seen in the docks. Brigantines, topsail schooners and ketches thronged the ports. Though no merchant brig had been built in this country since 1876 there were plenty about. Scandinavian barques laden with timber or ice with a windmill pump between the main and mizen masts were so common as to be hardly worth looking at. Luggers and dandy-rigged fishermen enlivened the Channel; as for Thames barges, one might as well imagine London river without them as London streets without hansom cabs.

When Stone discovered my taste he told me that he had a friend who knew a great deal about old ships and said he would introduce me.

I had joined the R.N.V.R. in 1903. In January 1905 I was on duty in H.M.S. *Buzzard*, moored off Blackfriars. My diary for 12 January has: 'On shore in the morning to the hospital. . . . On board in the evening. C— paid a visit so did Stone bringing Laughton son of Professor Laughton.'

On 20 January Stone and I dined with the Laughtons who then lived

at Parsons Green. In a long, deeply interesting talk about nautical antiquities Laughton made me realize how little I knew.

Following our talk he wrote me a long letter in which he enlarged on the importance of hygiene and disease afloat for the understanding of Naval history. He urged me to concentrate on this neglected study. But stu'nsails and spritsail topmasts fascinated me far more than scurvy and typhus and I replied to that effect. At this Laughton opened to me the wells of his knowledge and I drank eagerly.

Besides telling what he knew Laughton put me in the way of finding out for myself, suggesting books and MSS. at the British Museum and Record Office that would repay examination.

He and Stone were partners in an old Institution life-boat that they had converted into a 7-ton yacht, dandy rigged. She was called the *South Foreland* because she had begun her new life at St Margaret's Bay near the headland. I sailed with them several times and later was admitted as a partner; so I saw still more of Laughton, and sailing together we got to know each other really well. Our fathers were acquainted already through the D.N.B. Both were amongst the very few who contributed to every volume.

Naturally we tended to meet other people of like interests and soon were conscious of a little group of sympathizers and fellow-workers.

On 23 January 1907 I recorded: 'To dine with Laughton, so also Michael Oppenheim. We ate a goose and talked Naval antiquities.' I had been reading Oppenheim's *History of the Administration of the Navy*, in which he gives an inventory of the *Henry Grace à Dieu*, and his N.R.S. volume, *The Accounts and Inventories of Henry VII*. To meet him was an event. His manner suggested a good-natured tolerance of enthusiasm and that he was pleasantly amused at the interest his researches had aroused. After this we used to meet now and then.

Gregory Robinson has reminded me that he had an eye-glass which he wore in either eye.

Probably it was about this time, 1907, that Laughton and I began to consider that a nautical antiquarian society might be founded. We got as far as giving it a name, 'The Jal Society', after M. Auguste Jal, the compiler of the vast *Glossaire Nautique*.

But somehow the time was never, in Laughton's opinion, quite ripe for it.

A year later, on 12 January 1908, my diary has: 'To tea with Laughton. He suggested that I should write a series of articles for the *United Services Magazine* on the Evolution of the Ship.... It is at least probable that nothing will come of it but I should like to do it.'

The first article was written by the end of February. On 6 April I revised it after talk with Laughton. For some reason it did not appear for nearly a

year. I think it may have been left with Laughton for him to send it to the editor.

All this time another friend, Harold Brindley, was becoming interested in old sea lore. I had met him first in the zoological laboratory at Cambridge where he was a demonstrator. Later he became a Fellow of St John's College. The Cambridge University Cruising Club brought us together.

He was a large massively built man with a fine head and thick brown hair. His marked features wore a kind look that reflected his mind. When he died, in 1944, Laughton wrote that he believed he had never had an unkind thought.

His zest was delightful and his interests were wide. He was, if I remember right, a leading authority on earwigs, but he had files devoted to railway engines, old churches and I don't know what. If you mentioned such a thing as the Clifton Suspension Bridge or the Roman Wall you could be pretty sure that he would reach for a file containing neatly arranged notes and perhaps a photograph or two.

He had the best point of view for an antiquarian, that which sees the past as part of the present and does not regard something which has gone out of use as necessarily done with. He liked to tell how on some occasion he had worn his M.A. hood as a hood because of the weather.

Sailing, the R.N.V.R. and work at the British Museum and Record Office did not help my medical work, and passing each examination was like trying to round a buoy against a head wind and a lee-going tide. Whenever I went to Cambridge for another shot at one of the wretched things I used to go and see Brindley. Much of what I had learnt from Laughton I passed on to him and he joyfully embraced yet another interest. In 1909 we were collaborating in a paper for the Cambridge Antiquarian Society on The Ship in the Windows of King's College Chapel. It was presented by Brindley with lantern slides on 29 November and printed in Vol. XIV of the Society's communications. A bibliography for information on ships of the fifteenth to the seventeenth centuries concluded the paper and for this we acknowledged the help Laughton had given us. Notes and additions were added in a loose leaf and these begin 'Anderson, R. C., Naval Wars in the Baltic, 1522 to 1850'.

Our President had joined the R.N.V.R. in 1905 and in that year we both attended a course in H.M.S. *Powerful* at Portsmouth. He was then more occupied with history than archaeology and this delayed the full discovery of our common taste. The words 'spritsail topmast' passed between us, but we did not get much further in board.

At last, on 4 March 1909, several months before Brindley's lecture, my first article on The Ship, 1485–1515, appeared in the *United Services*

Magazine. It was an attempt to analyse and explain the inventories of Henry VII, edited by Oppenheim in the N.R.S., vol. VIII, and the inventory of the *Henry Grace à Dieu* in the appendix of his *History of the Administration of the Navy*.

A few days later a letter came for me, c/o The Editor, *United Services Magazine*, 23 Cockspur Street, London, S.W.

The Editor forwarded it to Laughton at 5 Ruvigny Mansions, Putney, where he then lived.

It ran:

Nancledra
Nr Penzance
March 9th 1909

Alan Moore Esq

Dear Sir

I have been very much interested by your article in the current *U.S. Magazine*, particularly because a short time ago I went through Mr Oppenheim's book in the same way that you have done, but drawing each item on the inventories as far as possible in turn.

The result was a fairly exact plan of the ships, with of course the important exception of the hull which could only be conjectural, as there must have been important differences between English warships and Genoese or Flemish traders.... [After asking if he might borrow a book he went on]

In extenuation of my crime in making such a request, I must tell you that for many years now I have never missed an opportunity of getting hold of any shipping material of the period before 1700 and I have always had the habit of making sketches and comparing them, so that now anything I can get hold of dovetails in somewhere. As you yourself are evidently fascinated by these old things as I am perhaps you will be able to sympathize with the feeling of ramming ones head against an impenetrable wall of darkness that comes at times and welcomes any new ray of light....

I think your attendant[1] at Greenwich was right as to *cradling*. I believe 'catharpins' and 'cats cradle' to be variant names of the game played with string across ones fingers, the likeness to a sailor would be enough for the name, but I can't prove this yet.

Vangs on the mizzen, these are not mentioned, but almost all my contemporary drawings show them....

But I am worrying a stranger who may not want my ideas

Yours very truly,
R. Morton Nance.

The stranger did want them and a correspondence began.

On 25 July a line was drawn across the sea story of Britain. My diary has: 'A man called Blériot flew across the Channel with an aeroplane.'

On 29 July the Laughtons, Stone and I, and some others, joined a friend's yacht, the *Wayfarer* in the West India docks. She was a converted Brixham trawler of 44 tons T.M., ketch rigged. We left next day towing to Tilbury astern of the ketch *Margaret of Gloucester*. Bad weather delayed us for a day in the Medway and we reached Hamble River on 8 August.

My log for 9 August has: 'All ashore in the gig for letters. Called on Mr and Mrs Robinson, he is a marine painter and an excellent one at that.'

1 J. T. Major of the Greenwich Museum. He joined the Navy in 1864.

On 12 August I recorded: 'Laughton and I spent most of the day talking with Robinson.' We had met in the morning just as we were about to get into the dinghy. Quay House was near, by the waterside, on the right bank. Gregory Robinson we found at once was a kindred spirit, full of lively criticism and humorous indignation against some accepted opinions: 'well, you *know*, Moore, I mean to *say*. . . .' He showed us his pictures and we had stimulating talks.

On 9 September 1909 Morton Nance wrote:

Dear Mr Alan Moore

I am very glad to hear that we are to have more of your scientific treatment of the ship in the *U.S. Magazine*. I shall look forward to the articles with much interest. They will be bringing the old craft on to times when they begin to show up a bit more clearly: but there are heaps of obscure points to worry round. . . .

Have you discovered the way in which the spritsail was rigged in the time of Henry viij. during your grubbing among the inventories?

Yours very truly
R. Morton Nance.

I wrote on 30 September, and after discussing some of the points he had raised, went on:

There was in the *Illustrated London News*, at the time when the fleet visited the Thames, an excellent picture of an Elizabethan ship, her topsails were rather deep for her supposed date, 1579, I think, but for a ship of say 1595 she would have done well, I can't remember the name of the artist, but whoever he was he knew something about the subject. I wonder who he was, the number of people who have tackled the subject [i.e. Tudor rig] seriously is so small that one likes to get into communication with each. I only know three besides Mr Oppenheim, who is more historical in his bent than archaeological, namely yourself, an artist called Gregory Robinson and Mr Carr Laughton with whom I discuss all researches that either of us make in the subject. He by the way had mentioned your name shortly before you wrote to me, but I forget exactly in what connection.

Pardon this enumeration of fellow worshippers at the shrine of St Jal, but I thought you might like to know of one or two people who realize their ignorance and the difficulty of the subject. . . .

Yrs sincerely
Alan Moore.

Later Morton Nance wrote:

Nancledra
Long Rock
Cornwall.
Oct 12th 1909

Dear Mr Alan Moore

. . . Have you discovered the *Illustrated London News* artist. I haven't seen the picture, but I am wondering if he took it from my model in the S. Kensington Museum which your date 1595 would about fit. . . .

I was very glad to hear of your circle of Jal ites. Mr Gregory Robinson I am ashamed to say, I do not know. He being also an artist has probably never heard of me either, but as ship lovers we ought to have much in common. It seems such a pity that people like ourselves should be

gathering material and working in a more or less aimless way when by working together we could do so much more, and really add to the sum of knowledge and at least clear what knowledge we have from false statements—and Charnock who is still the accepted authority officially.

If people already at work on manuscripts for other ends could be persuaded to send us things that they come across, illuminations or other records of shipping, in to us inaccessible places, we should I feel sure make many discoveries. The number of things that turn up makes one feel that the solution to each puzzle *must* be somewhere. If only we could form a society however small we could do and ask things that a private person hardly has the cheek to do. I can give you the name of another enthusiast, Mr W. Boultbee Whall of Barry. He is an old E. India Company man and has had practical knowledge of the old traditional sea ways.

Perhaps such a society as I suggest might be worked in connection with an existing one or as a section of it. I should be very glad of your opinion on the feasibility of such a thing. To get hold of fresh material and pass it round for each to make something of, would be most excellent but even the material that we have would give plenty of work and interest.

I hope this is not all wildly Celtic and unpractical—Cornwall is such a long way from London.

Yours sincerely
R. Morton Nance.

This was splendid. When Laughton read the letter he agreed that the time was ripe. My diary for 17 October has: 'To tea with the Laughtons. Discussed the foundation of a Jal Society.' Our discussion is reflected in the following letter which Morton Nance preserved and has kindly lent with others quoted in this paper.

On 22 October I wrote:

Dear Mr Morton Nance:

I would have replied to your last letter before, had I not been very busy....

I think the notion of a Jal society is an excellent one and it had vaguely occurred to me at least as far as a suitable name therefor. I was talking the matter over with Laughton last Sunday and several points arose. First should such a society be small or large.

Of course a small one is pleasanter; the members are apt to be more devoted, but there are disadvantages for instance, poverty, also such a society would be held together merely by correspondence with the probable result that its corporate unity would languish. It therefore seems (of course this is only an opinion) that the society if formed should be of a fair size; the useful work and chief advantages would tend to concentrate on a small coterie who would get the advantages of a small club and of a large at the same time.

Some subscription would be necessary for paying for photographs taken for the society and for the distribution thereof.

A means of communication would have to [be] arrived at, some editor in return for the free copy thus afforded might give space in his columns. *Army and Navy Gazette* or *Notes and Queries*, or the *Yachting and Boating Monthly*, an ignorant rag, but one which reproduces photographs well. Or a year book might be brought out.

The society might be run as an adjunct to the Navy Records Society, or at least were it decided to form a Jal society the N.R.S. might be induced to circulate an advertisement among its members.

Here is a list of possible members in alphabetical more or less, order. Some I know personally, others only by their works. Laughton knows a good many.

H. H. Brindley, a zoologist resident at Cambridge. He has not done any original research [nautical understood] but is much interested in the study and is a great compiler and sorter of information.

Ed. Fraser. Laughton says he has much general information and researches in archives and has made a special study of painting of men of war.

Sir G. C. V. Holmes author of *Ancient and Modern Ships*
Sir J. K. Laughton
L. G. C. Laughton
J. Leyland a historian I believe
A. H. Moore
Morton Nance
M. Oppenheim
C. N. Robinson
Gregory Robinson
Cecil Torr, author of *Ancient Ships*
Warrington Smyth.
E. Williams. Late Lieut R.N. formerly in charge of the Ship model dep^{t} at S. Kensington
W. L. Wyllie
H. Wyllie
Boultbee Whall.

It would be desirable to get members also from other countries who could furnish information difficult to acquire for those who had not access to foreign museums, etc. M. Bourel de la Roncière would be a useful member perhaps.

I have seen some of Whall's writings. I imagine that he is of more value as a source of information concerning his own period than as an elucidator of past obscurities.

Members might let it be known in what branch they were particularly interested and so lessen the labour in distributing information.

These notions I mention for what they are worth, for only by discussion can anything definite and practical be arrived at; others will doubtless occur to you. So far no one else has been approached on the subject beyond yourself Laughton and me.

I am almost ashamed to say that I have never seen your model at S. Kensington. I used to go there often when Lieut. Williams was in charge and have long talks with him, but since he retired, not knowing his successor and feeling I should be a stranger in the land I haven't been, but I will.

Yours sincerely
Alan Moore

Laughton spoke to his father, then Secretary of the N.R.S. and to Commander C. N. Robinson who was Naval Correspondent to *The Times*. Laughton was the same to *The Morning Post*.

I was corresponding with Brindley and probably wrote to Gregory Robinson. I wrote to Lieut. Edwin Williams with whom I had rather lost touch since his retirement. We had been friends since the day when in my teens I had ventured to knock at his door in the Museum to ask what the yard arm clewlines were in the model of the four-masted barque *Pass of Melfort*. Williams had joined the Navy in 1857 and the question took him aback. 'Studdingsail gear', he replied. It seemed unlikely and later he admitted his mistake. So began the first of many pleasant talks. He was a short merry little man with a beard, always glad to see me and answer questions. 'Now, now', he would say if I made a technical mistake.

He replied from 56 Catford Hill, S.E.

Dear Mr Moore

So glad to hear from you and to find that your interest in things nautical and pertaining thereto has not diminished. As to that Society that you are so interested in, nothing would give

me greater pleasure, than to belong to it, if not too expensive. I daresay you could tell me what the subscription to the Naval Records Society is. About the Museum they have lately purchased a lovely model of about the period 1760[1] it would be most interesting to have a chat about, there are several points about her that I am pretty nearly certain would be new to you.... To revert again to the Museum they have several new and very good models added since my departure, and sad for me to relate the place is very much improved. With heartiest good wishes and hoping to see you soon. Believe me

Yours most Sincerely
E Williams.

On *Sunday*, 21 November, I recorded: 'To the Laughtons...with Laughton to call on Com[r] C. N. Robinson at Priory R[d] Bedford Park; we discussed the formation of a Jal society. Mrs R. gave us tea; a Cap[t] Crutchley and a man called Lowe came in.

Com[r] Robinson has a number of interesting books. Back home to supper by motor omnibus.'

Next day Robinson wrote to Laughton who sent me the letter. It is typed.

34 Priory Road
Bedford Park
Chiswick
22nd November, 1909.

My dear Laughton,

I was very pleased that you could come and see me, and to make the acquaintance of Mr. Moore. I think if you can succeed in starting a small society for the production of a nautical Notes and Queries you will be doing the best possible thing for naval archaeology. I would suggest something about the shape and size of the *Navy League Journal*, and I could, probably find out for you from Crutchley what the cost of production is. I should say twenty-four pages, with or without a cover, would be ample. The title should be nautical rather than naval.

I also turned up in putting away one of my books some notes I made when reading Moore's articles[2] in the *United Services Magazine*. Has he settled the shape of the spritsail of 1485, and whether it was set above or below the bowsprit?...Have you found any picture of a traingular topgallantsail? It is unknown to me.

Your sincerely,
Chas. N. Robinson.

In December I was at Cambridge and no doubt discussed the Society with Brindley, though our paper on St Paul's ship chiefly occupied us.

The preliminary work of starting the society fell upon Laughton, and it is a pity that no record is available of what he did till 13 February 1910 when my diary has: 'To tea with the Laughtons....We wrote out the contents of a slip of paper to be inserted in the next N.R.S. vol[s] announcing the intention of forming a Jal society.'

1 I think of H.M.S. *Tartar*, now at Greenwich.

2 The second had appeared on 1 November. The third appeared on 1 March following.

3 Probably either Vol. xxxvii: *The First Dutch War*, Vol. iv, edited by C. T. Atkinson, which appeared in March 1910; or in *The Barham Papers*, Vol. ii, edited by Sir J. K. Laughton, which was issued in April.

I must have written specially to Nance for on 14 February 1910 he wrote:

Dear Moore

Many thanks for your long and interesting letter.

I am very glad to find that the Jal Society has really got so far. It remains for the Jalites to prove that they have something to say, and we shall then be fairly started. I suppose nothing was definitely said as to the sort of people that would be eligible. If we are to have funds to work with, it seems imperative that we should make it easy for anyone that is at all interested to join and yet it seems a pity to make it too amateurish.

I am so glad that the ship at the Arts and Crafts pleased you I don't suppose there was another person who was able to appreciate just that aspect of it. I should like to know where we differ with regard to this ship, it might lead to further light. . . .

The letter goes on to discuss several technical points.

I recorded on 3 April: 'To tea with the Laughtons and was very busy writing to those who had inquired of the Proposed Society of Naval Antiquaries.'

Next day I wrote to Nance.

April 4th 1910.

Dear Morton Nance:

I never wrote and thanked you for the sketches of spritsail gear which you sent me in February, let me do so now.

I hope the Jal Society prospectus reached you. You will see there that Laughton has taken on the job of acting secretary till a meeting can be held. Do you mind writing to him so that he may be able to include your name among those from whom he has heard direct. Did you see *The Times* leading article? It was very sympathetic. Up till yesterday 43 people had written or otherwise made their support known. There are several admirals, including Prince Louis of Battenberg and a fair number of lesser naval officers.

The quality of the inquirers for the most part seems good, though as yet the number seems small for running a periodical; quite enough however I should think for forming a Society; the effectiveness of which would be much increased if the paper were possible. Luckily we have the advice of Com' C. N. Robinson who knows all the ins and outs of Naval Journalism.

I wonder what name the Society, supposing fortune is favourable, will assume I doubt 'Jal Society' being acceptable: a regrettable number of people having never heard of Jal. . . .

I will report progress when there is any.

Yours sincerely
Alan Moore.

Nance replied

April 9th 1910

Dear Moore

Your article in the *U.S. Mag:* raises so many interesting points that I wanted to write about or I should have replied sooner.

Firstly I must thank you for the prospectus I have not seen *The Times* leader, the only mention of it, the Society that I have come across is the notice in *The Express*. I hope the names continue to come in. I have sent in my name on hearing from you that it was wanted.

Is Brangwyn among those who have written? Sir William Van Horne of Montreal has a collection of ship models and would perhaps be interested. We ought to have the directors or curators of every naval or marine museum and library on the free list if not otherwise.

I expect you are right as to 'Jal Society'. It would seem a little too much as if we were banded

together for the study of his works, instead of carrying it further than was possible to him or any single person at any time.

The net result of the inventories in your last article seems to be the making of fresh mysteries to unravel....'

The letter then becomes very technical.

We knew that *The Times* leader was by Commander C. N. Robinson, but for some reason he would not admit it. Laughton wrote of the proposed society in *The Morning Post.*

On Sunday 10 April I recorded: 'To tea with the Laughtons. 58 names have come in for the Nautical Antiquaries.' On the following Sunday I took Lieut. Williams to have tea with the Laughtons. Probably this was the first time that Laughton and Williams had met. No doubt we discussed the Society. A preliminary meeting had been fixed for May. And then, on 7 May, 'The King is dead, long live King George....'

Next day, viz. Sunday, 8 May, I noted: 'To tea with the Laughtons. Sent off many post-cards postponing a Nautical Antiquaries meeting.'

The funeral of King Edward VII took place on 20 May.

On Sunday, 5 June, after recording the Laughtons' usual hospitality, I find: 'We sent out circulars announcing a meeting of the supporters of the proposed Nautical Antiquary Society.'

At last on 14 June the day came.

To lunch with Laughtons, where were Wyllie R. A. and Harold W. Then to the United Services Institution where a meeting was held and at III. 25, a society for the study of nautical antiquities was founded. About 40 people present. Sir J. K. L., Lieut. Williams, Gregory Robinson, Laughton and I had tea in an a.b.c. shop. Then I with Laughton to the M. Post offices to see that the account for the Press was correct.

W. L. Wyllie, R.A., was asked to take the chair at this our inaugural meeting.

Next day I had to go to Cambridge and on the 16th lunched with the Brindleys and no doubt told them all about it.

Entries in my diary indicate the next steps. 22 June: 'To Putney after dinner to discuss the Nautical Research Society with Laughton.' Three days later I was able to keep Gregory Robinson up to date. 25 June: 'Past the Needles at a quarter to x. [In a friend's 8-ton cutter from Torquay and horribly seasick on the way.] Hamble xii. 15. Lunched with the Gregory Robinsons.' 30 June: 'To the Brit. Mus. met Laughton there...with Laughton by River to the Sailors' Palace Limehouse to a subcommittee meeting of the Nautical Research Society...Saw a fine full rigged ship in the River off Limehouse.'

On 11 July is almost the same entry, lacking the ship. 19 July: 'A Committee meeting at three at the U.S. Institution of the Society for Nautical

Research. Present Sir Reginald Custance in the Chair. Com[r] C. N. Robinson, Laughton, Leyland, Perrin the Admiralty Librarian and myself.'

On 21 July: 'in the afternoon to Perrin's room in the Admiralty Library, whither in a short time came also Laughton and Com[r] Robinson, and we held a subcommittee meeting to discuss the *Mariner's Mirror*.' Julian Corbett, who became a member, looked in to see Perrin.

Next day I was at the Admiralty Library to look at some records. Perrin showed me the famous Board Room with a wind dial set in a map of the English Channel which was over the fireplace. The dial was worked by a vane on the roof.

It was a happy time, except for medical examinations, thus meeting able people all interested in parts of the same study. No one of our little group was trying to get special credit for himself or to be first in the market. All knowledge and discoveries were freely shared. Laughton, I know, would make a genuine enquirer free of the results of masses of research.

On 28 July the subcommittee met again at the Admiralty with Laughton, Leyland, Perrin and the writer present.

After this my diary has no entry directly concerned with the S.N.R. till 22 September when I recorded a Committee meeting at the Admiralty Library at four; present Commander Robinson, Perrin, Laughton and myself. The next recorded was on 6 October with Laughton, Leyland and Perrin. As before we met in the Admiralty Library.

The Committee met again on 25 October, presumably at the Admiralty: 'After which Laughton, Robinson, Williams, Perrin and I had tea together in a shop.' On 30 October Douglas Owen came to tea with the Laughtons.

I have no record of when the name of the Society's periodical was decided, but on 12 November noted 'in the evening was busy writing an article for *The Mariner's Mirror*'.

A subcommittee met at the Admiralty Library on 1 December. Next day: 'A meeting of the Provisional Committee of the S.N.R. at 11. 30 followed at 111 by the 1[st] annual general meeting, Sir Clements Markham in the chair. . . . All rules &c. passed.' About thirty people attended, among them my learned father.

Though his nautical knowledge did not go much beyond knowing a ship from a barque, historian as he was, he thought a society like ours deserved support.[1]

Have the rules survived? I found in Vol. 1 of the *M.M.* three copies of the

1 Perhaps this is the place to mention that Queen Victoria's Navy, or at any rate one of her services, included a curragh. My father, probably in the 'sixties or 'seventies noticed her on a West of Ireland beach. 'H.M. *Curragh*' was inscribed on her bow.

following. The hand is Laughton's, some reproducing agent has been used. The papers almost certainly accompanied a letter of 4 March which ends, 'The enclosed are for circulation'.[1]

Rules of the Nautical Research Society

(Extract from draft not yet ratified.)

I. The name of the Society shall be the *Nautical Research Society*.

II. The objects of the Society shall be:

(1) To encourage research into Nautical Antiquities, into matters relating to sea-faring and ship-building in all ages and among all nations, into the language and customs of the Sea, and into other subjects of nautical interest.

(2) For this purpose to publish periodically a Journal, to be called the 'Mariner's Mirror', such Journal to contain original articles, notes and queries, pictures and designs, and generally to serve as a medium of inter-communication between members of the Society.

(3) To collect material with a view to the ultimate publication of a complete and scholarly Nautical Encyclopedia or Dictionary.

XIX. Any person desirous of becoming a Member of the Society, and applying to the Secretary may be admitted, subject to the approval of the Council.

XXI. Each member shall pay on his admission to the Society a subscription of One Guinea for his first year of Membership, and for all subsequent years a subscription of Half a Guinea, due and payable on 1st January in each year.

The decision to found a Society was taken at a preliminary General Meeting held in London on 14 June 1910. The present intention is to begin publishing the Journal in January 1911; a Committee is at present making the necessary arrangements.

Harold Brindley had found a line of his own and was following it with characteristic thoroughness and pertinacity. On 23 December we went to Greenwich Museum to look at seals which bore ships. He had been given permission to visit the Museum though it was shut and to have the seals out of their cases to examine.

The 23rd was Laughton's birthday and I dined with him.

On 29 December the Council met at the R.U.S.I. in Whitehall. Someone was there whom I did not recognize. I think Laughton introduced me. It was Morton Nance.

Postscript

Number 1 of *The Mariner's Mirror* came out on 11 January 1911. Laughton was editor. The pale green cover bore beneath The Society for Nautical Research a reproduction of the original English edition of Waghenaer's Speculum Nauticum, 'The Mariner's Mirrour' of 1588. The

1 The letter was mainly concerned with reproducing an Elizabethan pinnace, using a man-of-war's launch. We faintly hoped it might be done. A sheer draught and the dimensions of the spars are included. It is a light-hearted letter in a mixture of modern and Elizabethan English beginning 'I ha. wrote to ye Grommet', his half-brother, serving in H.M.S. *Bellerophon*.

central space was only partly occupied by the title in Roman capitals and four lines of ordinary print:

Wherein may be discovered
his Art, Craft, and Mystery
after the manner of their Use
In All Ages & among All Nations

This design came in for some trenchant criticism from Gregory Robinson who drew the cover used from 1912 to1923 rewriting the inscription so as to fill the space, with the addition of the 'The JOURNAL of the SOCIETY for NAUTICAL RESEARCH. The gothic heading was dropped. The paper was white.

Reading it now there seems more than a touch of Wardour Street in the inscription. We meant it to be formal in an old style rather like 'witnesseth' in an indenture, and liked to think that what would have seemed natural in 1588 best expressed our meaning in 1911. I think it was a mistake all the same. It is a common experience that after seeing a play acted, everyday life seems to take on a dramatic quality. In like manner some of us may have been influenced by reading Tudor MSS. For fun, too, Laughton and I used sometimes to write to each other in Elizabethan English. I have a postcard of 1907 from Oppenheim attempting the same. Since it concerns the S.N.R. I can't refrain from quoting a *jeu d'esprit* of Laughton's in a letter of 11 March 1910:

I write but to send those papers for the wh you askt in order that the seed may be sowen in Cam Bridge & thenvirons. For myself I doe my poor endeavoure amongst the lewd writers for the presse, seeking humbly for access to and hospitalitie within their valuable, vizt profane squallid and withal ignorant columse. And that this care bestowed on the plowing & the harweing of the grund as wel upon the sowing of the sede ittself may prosper and bring forthe fruit at first the tendre shuit then the ear and then the full corn within the ear even an hundred fold is the constant wish & prayer of your bounden servt to cōmaund.

In 1924 the cover was redrawn by R. T. Gould whose name is not in the list of members for that year. In the January number

THE MARINER'S MIRROR
the quarterly journal
of the
Society for Nautical Research

is printed in red ink.

Again a good deal of space is left blank. This was remedied in the April number which has the title, volume number and date in capitals and at the head above the design THE QUARTERLY JOURNAL *of the* SOCIETY FOR NAUTICAL RESEARCH as at present.

There were some teething troubles. No. 2 was delayed by a printers' strike till 17 February. No. 3 appeared on 18 March. I noted on 25 May: 'The April no. of *The Mariner's Mirror* came out much delayed by the printers' strike'. The May number was out early in June.'

The first list of members is dated December 1911. It contains 248 names, including those of clubs and institutions. At least 86 members were officers of the Royal Navy.

Besides names already mentioned, and those of twenty-three Admirals, some names catch the eye. Captain L. Arenhold of Kiel. Some of his reconstructions of medieval ships illustrate 'The British Fleet' by Commander C. N. Robinson. They look too good to be true.

Lord Brassey[1] of the *Sunbeam*. Geoffrey Callender, then at the R.N. College, Osborne. C. B. Fry, to the world more famous for his record long jump than as head of the training ship *Mercury* in Hamble River. Training ships were well represented, Commander D. Wilson Barker, R.N.R., of the *Worcester* and Captain A. K. Hill, R.N., of the *Warspite* being members.

Dr H. Lewis Jones, author of *Swin, Swale and Swatchway*. It is about cruising in the Thames estuary. It describes no heroic ventures, but is one of the pleasantest and most readable of yachting books.

Thomas L. Devitt[1]. Devitt and Moore's sailing ships were famous.

The Rev. Edmond Warre, D.D.[1], impressive and tremendous Headmaster of Eton. He had been a great oar. Appropriately his special interest was in triremes.

One of the original objects of the Society has not been tackled; the compilation of a nautical dictionary. The task becomes harder as the old sea terms pass out of use and local meanings are forgotten. In the *M.M.* for July 1924 Laughton wrote an admirable article on the subject, showing how it ought to be done and what kind of difficulties would be encountered. He gave as a model and as a warning the treatment of 'Board' in the *N.E.D.* Someday enthusiasm and energy may undertake the work.

The foregoing makes no pretence at being the whole story of our beginnings. In his Editorial in No. I of *The Mariner's Mirror* Laughton wrote:

> It was also gratifying to find that many of the applicants, having for long had some such scheme in mind, were in consequence prepared with useful suggestions. It resulted that much sound advice came quickly to hand, and that it soon became apparent that more could be done than had originally been proposed.

It will be generally agreed that our Society has justified itself.

[1] Vice-President.

THE SHIP OF THE RENAISSANCE

By R. Morton Nance

Part II

IN the Mediterranean it would seem that, once the idea of sails auxiliary to the mainsail was accepted, square foresail and topsail and lateen mizen all blossomed forth almost simultaneously in the largest ships; while lesser craft might be one-, two-, or three-masted, and carry or lack a main-topsail. We may, accepting some rather dubious instances, add this possibility: that in the north of Europe seamen were not easily persuaded to adopt the alien lateen, and for a time set a square mizen. However, by the time we get illustrative material of really convincing northern three-masters, these have lateen mizens, and are fairly started on the way which leads to the full-rigged ship as that expression is now understood. Some of these examples are close copies of southern carracks, even to the extent of having two-spar yards, *calcets* and jacob's-ladders, if not cross-seamed sails; but there must have been many northern ships which retained the old one-spar yards and ratlines, or these could never have prevailed so quickly as to become universal in the sixteenth-century ship rig. In England, especially, the old hounds were kept; and while in most countries a thwartships *calcet* or cap remained in use for the ties as topmasts grew bigger, the English cap, no longer used for the ties, was set alongships.

Clinker-building, too, in the north of Europe evidently died hard. The artist of the Warwick Pageant (*c.*1485-90)[1] takes pains to insist on the entirely clinker planking of some of his big ships; not quite correctly, we may perhaps opine, as some of it is even upside down, and as he elects to give it to a Genoese carrack, which otherwise might have been drawn by Carpaccio. But for small craft clinker-building evidently held its own, and probably for small coasting ships it was displaced but slowly. In northern carvel building, too, partial clinker-work survived in the planking beneath the aftercastle as well as beneath the forecastle. We see this especially in Memlinc's ships on the St Ursula casket at Bruges (Fig. 12*a*), and in the 'barges' and fishing-boats of 'W.A.' (Fig. 12*b*). These vessels give us other instances of the way in which the change over to carvel building might fail to alter old northern ways. For example, 'W.A.' shows the old semi-circular hawse and the old fender-cleats; the latter merely fixed below the

1 Brit. Mus. Cottonian MSS. (Julius E. iv); Viscount Dillon & W. H. St John Hope, *Pageant of the Birth, Life, and Death of Richard Beauchamp, Earl of Warwick*, 1389–1439.

bottom wale and altered a little in shape to fit there. Moreover, both Memlinc and 'W.A.' show us the old stern, without a wing-transom. For smaller traders and fishing-boats especially, this high, round pink-stern, with its tiller-hole set below the junction astern of the two main-wales, or below the transom if one existed, became a lasting fashion in Holland, the distinction increasing as the transom-sterned ship developed further. What is more, clinker-work was not peculiar to the upperworks of pink-sterned vessels; down to the very end of the seventeenth century it survived in the upper works of the largest Dutch men-of-war.

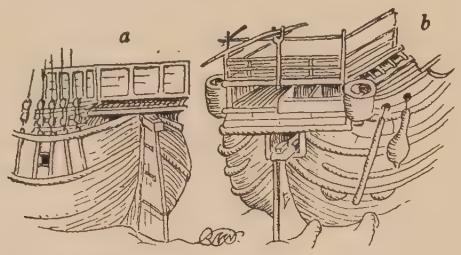

Fig. 12. Sterns: *a*, Memlinc; *b*, 'W.A.'.

It may well be that in some parts of northern Europe carvel-building for small boats had survived from time immemorial. It would, for example, appear from Caesar's description that the heavy-timbered vessels of the Veneti were so constructed; and the similarity existing between Breton and Cornish carvel-built fishing-boats is at least very suggestive. Any such prevalence of carvel building might well have affected the southern carvel style when this was newly introduced to northern Europe, or have assisted its ready adoption, at least by Breton builders.

In spite of any such possible local modifications, it was in the main the Mediterranean carrack type which became the pattern for the build and rig of later fifteenth-century three-masters, as we find them most completely drawn, engraved, painted or carved in the north and west as well as in the south of Europe, and it is certainly this type with which we are now most familiar.

Its best examplar in northern art is the *kraeck* of 'W.A.' drawn *c.* 1460 (Fig. 16), which shows nearly every detail we could desire, though the sails are furled, and the artist's viewpoint prevents one from seeing whether the 'chimney' is present or not.[1] This print was copied and recopied in woodcuts, miniatures, paintings, tapestries, carvings and metalwork so often, and in so many lands, that if each version were considered an independent

1 The 'chimney' is shown in several other carracks; including one of Carpaccio's, and the 'Turk' (*M.M.*, Vol. IX, opp. p. 282 (see Fig. 17)).

versions that would give a very misleading idea of the complete unity of European ship-fashions over a very long period. Some of these copies, in fact, were made quite a century afterwards and all prove nothing but the popularity of the original. It is from other contemporary ship-pictures, drawn less cunningly perhaps, but showing in other positions equally southern details of build and rig, that we can better establish the fact that such carracks (with slight local variations of fashion) were general in the north, and that 'W.A.'s' big ship was not merely a visiting southerner. Indeed, there are three strong arguments against her southern origin. There is proof in the first place, I think, that 'W.A.', himself a northerner, made his engraving not from an actual vessel, but from a drawing of a church-ship model;[1] secondly, the deadeyes to each shroud and the chainwale to which they are set up are not found in contemporary southern carracks; and thirdly, the mizzen-lift, by means of which the mizzen was changed over *abaft* the mast (instead of, in southern style, *before* it) is not found thus early in Mediterranean ships, and seems likely to be a northern improvement. We might add that the *kraeck* shows a battery of swivel breechloaders astern, and one more in the mizzen top, earlier than guns appear in southern ships. Such information as we have favours the idea that the southern carrack with very slight modifications was adopted as the great ship of the north; and that the lesser cogs and barges of the north, retaining many old northern features, were far more widely differentiated from their own relatives in the Mediterranean. These seem to have been much shorter and rounder, without tumble-home, and less deep, but otherwise like little carracks. The already noticed Mataro model, now at Rotterdam, seems to give us such a Catalan *nave* of *c.* 1460, complete but for the ravages which time and clumsy 'repairs' have made in her rigging. She was originally a 'ketch' two-master, without a bowsprit.

A feature added in the south to the aftercastle, which had important results, was the awning or tilt-frame, used also to support a defensive netting. At first this is seen as a mere square framework supported, as in the old southerner (Fig. 1), by posts at each corner of the 'castle'; but as a variant we find a lean-to tilt-frame, sloping forward (Fig. 18 (2) and (2 *a*)). Later, the original framework, made heavier, supports a second 'castle', over which a tilt-frame is raised, first as a lean-to, and later as a ridge-roof, the rafters or ledges of which roof run alongships as in the lean-to, or athwartships as in 'W.A.'s' *kraeck*, according to the shape of the 'castle' itself (Fig. 18 (3) and (3 *a*)). Occasionally, a series of bent ledges or 'bails' support a barrel-roofed tilt. By a repetitive process which ended in the turning of such temporary fighting-stages into integral parts of the old

1 See my *Sailing Ship Models*, pp. 13, 17.

northern cog, these upper castles and frames extended soon to the forecastle also, and in their turn became absorbed into the hull as the towering poops and forecastles to which our eyes are accustomed in ships of the sixteenth century (Fig. 18 (4)–(6)). Similarly, the light 'corridors' or gangways at the sides, both in the waist and in the 'summercastle', became complete decks. 'W.A.' (Fig. 16) shows all these at their full development before the integrating process had begun. He also shows what looks like, and may be, a gallery astern, between two bartizans which may have served as garderobes. It is worth noting, however, that the places occupied by these on the stern of several southern carracks are filled by what is like a great hencoop or provision-crate, flanked by objects which on the whole seem most likely to be large water or oil jars, lashed about with ropes or fitted into a projecting ledge (Figs. 8, 13*a–c*). In any case they can hardly be 'steep-tubs',

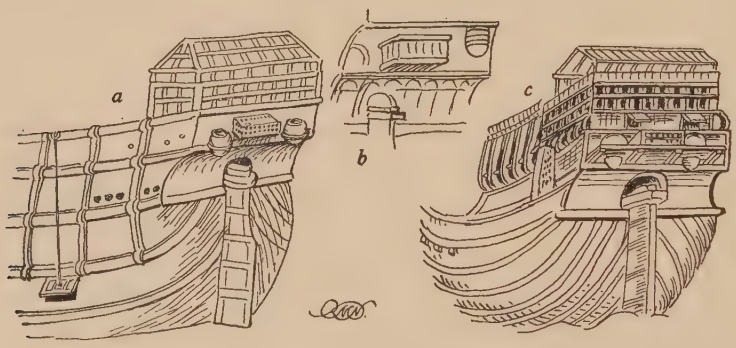

Fig. 13. *a*, Reixach 1468; *b*, Libre de Consolat; *c*, Reuwich 1483.

such as 'W.A.' would give his vessels (Figs. 12*b*, 16), for in some instances we seem to have upon the quarter these same tubs for de-salting preserved meat as well as the objects astern. The Peter Martyr ship has crates on each side of her poop, and this and the jars may be peculiarly southern equipage.

Hardly less detailed than 'W.A's' are some Florentine vessels, a carrack and two lesser straight-sided, skidless ships of about the same date in a print at the Albertina, Vienna.[1] Here we have sight of the 'corridors' aft, implied only by the pavisade in 'W.A's' drawing. These are shown well, though perspective and proportion are queer, in the Turkish carrack in the Karlsruhe Pilgrimage MS., which also shows the 'chimney' and some details of the mainsail (Fig. 17). Though the 'chimney' does not appear in the Vienna print, this shows the sails in as full detail as the hulls and rigging. Professor Callender has drawn my attention to a carrack with lofty 'corridors' and exaggerated 'chimney', which he has noticed in an edition

1 *M.M.*, Vol. III, p. 239, fig. 1.

of Vitruvius printed at Milan in 1495, where the engraving (Fig. 19) illustrates a paddle-wheel project. Like the Turkish carrack, this has a mainsail bonnet with eyelets below for lacing on a drabler. Its anchor-shoe of sennet is like that in the Albertina carrack. Two projecting scuppers

Fig. 14. Florentine carrack, *La Sphera Mundi* MS. (edges restored).

spout water, and its light-ports have hinged lids instead of the usual sliding shutters. A jacob's-ladder to the fore-top is another unusual detail. To the evidence of the Albertina carrack should be added that of a Florentine carrack, apparently by the same hand, which is used to illustrate Noah's-

Ark in a poem *La Sphera Mundi*, a copy of which is in the New York Public Library (Fig. 14). This is far from being the conventional house-boat Ark. The only possibly Ark-like features which it exhibits are rather unusual 'castles' along the waist (where such erections are not quite unprecedented) and an astonishing 'castle' beside the mainmast, for which no parallel has been found and which seems to go beyond anything ever seen in such a ship. Apart from these oddities this engraving tallies fairly closely, in every detail common to both, with the carrack in the Vienna print, *M.M.*, Vol. III, p. 239, fig. 1. It goes, however, a great deal futher than the Vienna print in showing all possible (or, as may at first sight seem, impossible) canvas. The foresail is minute; but the flapping main-topsail must be at least four

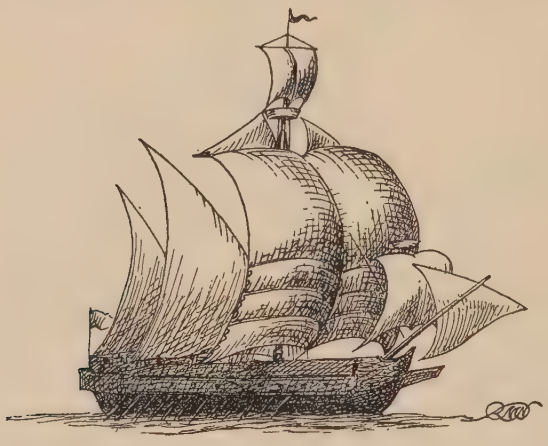

Fig. 15. Square-rigged galeass. Carpaccio.

times as large; and besides these two square auxiliaries, there are six triangular sails. In addition to the permanent lateen mizen, we see what may as yet be only a temporary 'bonaventure', set right aft; and inside the starboard bulwarks, set as 'studding sails' on temporary masts of their own (stepped one can but guess how), are still two more lateens. These extra sails, strange as they appear, are at least possible developments from boat-sails set on banner-staves, though their obvious disadvantages show that only the 'bonaventure' had much survival value.[1] More interesting than these 'fancy' lateens are the 'raffee save-alls', set to catch the wind that would otherwise escape between the little topsail, sheeted to the top-rim, and the mainsail. These sails, obviously useful as they are, seem only to be shown in one other picture, Carpaccio's 'Saint George', where they are set

1 In the Mataro model the mizen-mast step is only a timber bolted below the deck-beams, suggesting that at an earlier period this was a temporary mast stepped on the deck itself, and held chiefly by its shrouds.

on a four-masted square-rigged trading galeass (Fig. 15), again under all sail, including a temporary lateen on the bowsprit which makes the lateen 'studding-sails' in our Noah's-Ark ship seem less improbable. As this Florentine artist is so taken up with his skill in catching the effect of flapping sails, it is very useful to have Carpaccio's rendering of the same sails sheeted home. Carpaccio's little main-topsail is given a 'middle sheet', answering to the 'bowge' on the lowest of the three bonnets on the mainsail. In the prints of the Florentine artist it is curious to note that, in spite of the care with which they are drawn, all halyards and jacob's-ladders are omitted. Perhaps the safest explanation of this is that the artist, like 'W.A.', may have consulted models, in which details which the maker found difficult were not shown. It is interesting to see that, as we have noticed in the case of the cog, a few shrouds are led further aft than the rest as 'backstays'. It is probably because such features are unlike anything in the old southern rig that these are set up with deadeyes in northern style, and not with blocks like the others.

One obvious step from the rig shown in the 'Noah's-Ark' carrack would be the joining of two triangles of canvas (equivalent to its 'raffees') to the sides of the square topsail (Fig. 20, (2, 3)), and allowing the sail, thus enlarged, to be sheeted to the yard-arms. This seems not to have been done until just before the end of the fifteenth century, when with altered rigging it became possible to hoist the mainyard higher. On the other hand, the innovation of a square spritsail on the bowsprit (Fig. 20 (3)) came somewhat earlier, perhaps about 1480. The bowsprit, as first found, was employed only for the main-bowlines (Fig. 20 (1)). It retained this original function throughout the fifteenth century and in addition carried a boarding-grapnel and chain (see Fig. 16), but it had never been employed for carrying a sail before the date suggested. Until the close of the sixteenth century the spritsail was always lowered to be furled, and was usually stowed alongside the rails of the head, pointing up like a second bowsprit (Figs. 23, 24).

As we approach and pass the year 1500, we find the foremast and its sail becoming larger and a fore-topsail becoming normal; the mainsail thus losing some of its predominance (Fig. 20 (4)). Southern-style shrouds, cross-seamed sails, 'beam-ends' and 'chimney' have all disappeared from the Mediterranean by about 1530; the latter not even persisting in lateeners. Thus as a general result of the interaction of styles and the survival of the fittest, ship-rig becomes more or less uniform both in north and south. Until about 1520 main and fore sheets remain single ropes; and until still later topsail-braces lead into tops. For a similar space of time fore-braces lead straight down to the deck, but they are finally led back to horses on the stays, and thence to the deck.

Keeping step with such changes of rig, the 'castles' and tilt-frames gradually become further consolidated into parts of the ship, but leaving traces of the stanchions on which they were formerly reared, in the tiers of arched openings which serve to give light and to act as emplacements for swivel guns (Fig. 18 (5)–(9)). For big guns, when we reach the sixteenth century, we find, as we proceed, gun-ports cut below in the sides of the ship in increasing number. Cargo-ports had long before been cut in a ship's

Fig. 16. 'W.A.''s *kraeck*.

quarters and even fitted with port-lids (Figs. 13*a* and 16), so that the gun-port proper, in a structural sense, was hardly as revolutionary a change as another which came in about the same time, whereby the fullness of the stern beneath the wing-transom was truncated and the opening planked

over with a flat 'square tuck' (Fig. 22*b*). Had this been done only to make a mounting-place for stern-chase guns it would need no explanation; but if pictures can be trusted, the new stern came before its portholes. It may have been intended primarily to make the ship more commodious aft,

Fig. 17. Turkish carrack, Karlsruhe Pilgrimage MS.

perhaps imitating a stern of the same form which for some time earlier had been in use in the Mediterranean for ship's boats and other small oared craft (Figs. 2, 7). At least one ship miniature suggests that a two-sternpost stern, like that of the southern *huissier*, preceded the square tuck; but this

seems extremely unlikely as an intermediate form, and as a step in the evolutionary process may be dismissed.

Even before the discovery of the Mataro model, we were fairly well supplied with information as to ships of 1450 to 1500, but between 1500 and 1550 the case is altered: such models as we have are not very good, and the abler artists seem less interested in real ships than in pseudo-classical fancies. Onward from Barberi's *Venice* (1500), especially interesting for its Adriatic coasters with quarter-rudders, a survival of the old southern style (Fig. 21), we get maps and views which give a good general idea of ship-development through the century; but detailed pictures are rare. Paris Bordone,[1] in a picture at Venice, lifts the veil a moment by showing us a ship with a stern which projects counter over counter in sixteenth-century style, but still with the 'foot-garnets' of the fifteenth-century carrack. Except for a possible garnet which, as engraved, never reaches the clue of one of Bruegel's mainsails, there are no more garnets to be seen at either foot or clue until quite the end of the sixteenth century. Even topsails have no cluelines until about 1580, by which time they had grown much bigger. How clue-garnets, once used, could have been dropped is something of a mystery. Possibly tackles from the mast-head were hooked on to the clues after lowering the sail: certainly the fitting of clue-garnets on the yards, in imitation of the cluelines recently given to topsails, closely coincides with the raising of martnet-pendants to the topmast-head; and both came in with the practice of furling the courses without lowering them, somewhere about 1600. Buntlines have still to wait a few years before making their first appearance.

It is remarkable that while most countries in the early years of the sixteenth century were outrivalling one another with 'Ships Royal', no official pictures of these great vessels survive. A painted church ceiling in Denmark shows a four-masted ship with three tops on the mainmast, but *la Grande Françoyse* of 1527 had four. In such monsters lateen main-mizen topgallantsails and main 'skysails' were carried. But although these giants had their influence in introducing novelties of rig, ordinary big ships still lagged at a sensible distance astern. The largest vessel shown in the great plan of Amsterdam, 1544, as in Bruegel's somewhat later ships, does not rise above topsails; and Hoefnagel's ships in Braun and Hogenberg's *Orbis Civitates Terrarum* rarely show topgallantsails: even at the end of the sixteenth century they are found only in big ships. Topsails, however, by 1550 were already big enough to be set above a furled mainsail.

A contemporary feature which was of more real importance than the 'Ship Royal' craze was the way in which most countries were then experi-

1 Paris Bordone, born 1500; died Venice, 1571.

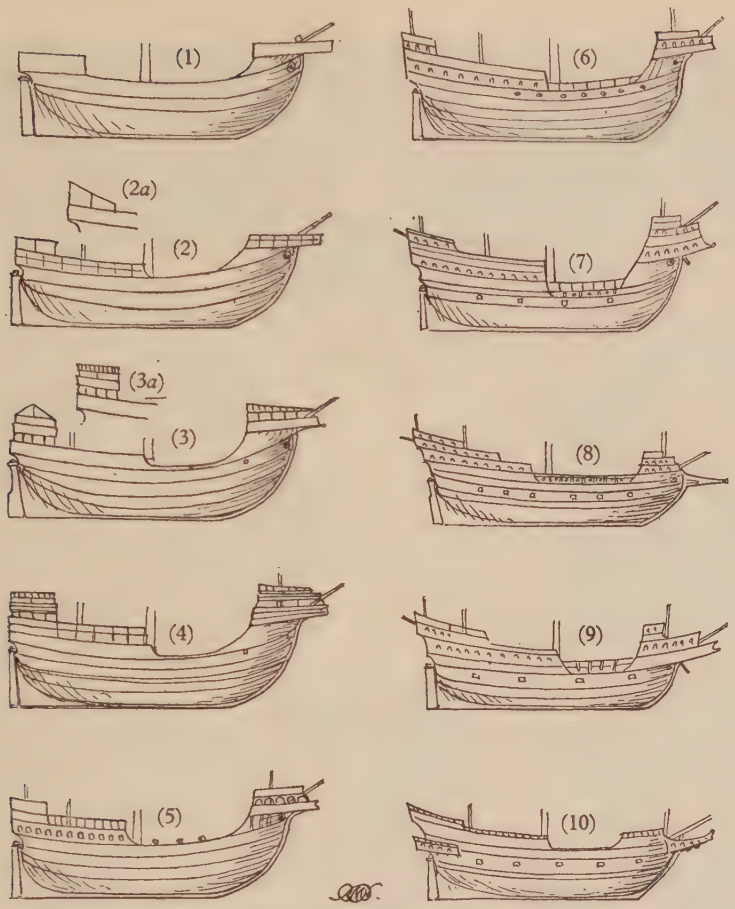

Fig. 18. Hull evolution 1400–1600. 1, carrack: 'castles' only; 2, carrack: 'somercastle' brought forward, tilt-frame aft; 2*a*, carrack: variant tilt-frame of lean-to form; 3, carrack: poop, raised on stanchions, with thwartships tilt-frame over it, forecastle tilt-frame; 3*a*, carrack: variant tilt-frame of longships form; 4, carrack: stage added to forecastle also, tilt-frame over it; 5, carrack: poop joined to hull, arched openings, guns on gunwale; 6, carrack: forecastle consolidated, poop built raking, guns in round open ports; 7, carrack: two counters aft, heavy forecastle, boomkin beneath it, guns in rectangular ports with lids; 8, first galleon: low-down beak, reduced forecastle; 9, intermediate form between carrack and galleon: low-down forecastle; 10, later galleon: beakhead, reduced upperworks, stern gallery.

menting with combinations of the sailing-ship's qualities with those of the galley. The Madrid tapestries,[1] the Alhambra wall-paintings, the Anthony Rolls,[2] and ship-paintings inside the lids of Italian coffers show a variety of these. We find oared vessels adapted to carry square sails and broadside

1 Representing the Expedition to Tunis, 1535.
2 Anthony Anthony, *A Declaration of the Royal Navy*, 1546, Brit. Museum Add. MSS. 22047.

Fig. 19.

batteries; and sailing-ships adapted for rowing and bow-chase guns, or fitted for warfare against galleys on their own terms by being armed with ramming beaks. Out of this welter of mongrel forms one strain emerges which becomes comparatively fixed and has a great influence on later ship-

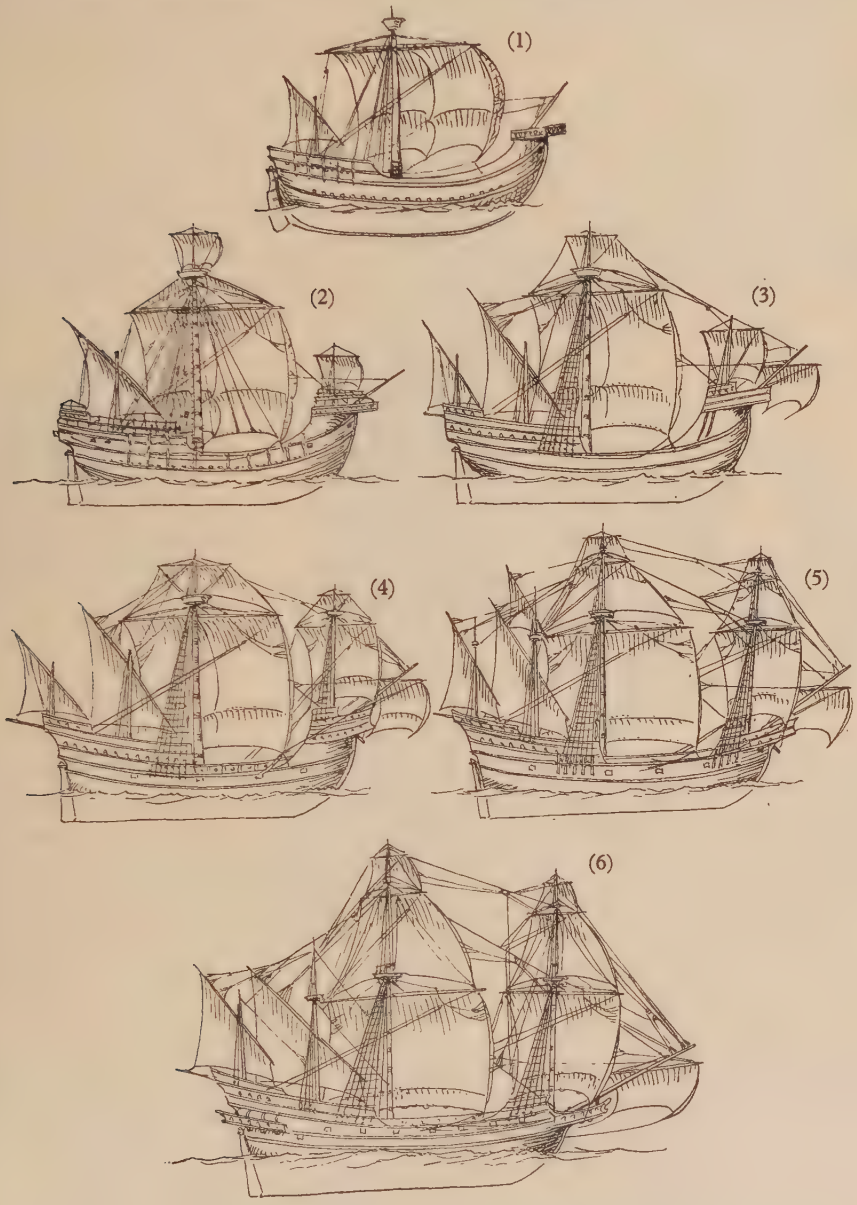

Fig. 20. Evolution of sail plan 1430–1600. (1) *c.* 1430; (2) *c.* 1450; (3) *c.* 1500; (4) *c.* 1530; (5) *c.* 1560; (6) *c.* 1600.

history. This is the galleon, built longer and narrower than the lofty carrack; but especially differing in the form of the bow, which carries a forecastle with little or no projection, and, low down, a beak like that of a galley (Fig. 18 (8)). This original spur-beak, proving less useful than was expected, soon disappears and a decorative compromise between galley-beak and carrack forecastle eventually becomes the characteristic galleon 'beakhead' (Fig. 18 (10)).

It is to Pieter Bruegel the elder that we look for the best detailed ship pictures of the sixteenth century. His designs, dating from *c.* 1550, stand alone, and they can be traced in as many copies as the ships of 'W.A'. In spite of quaint mannerisms, such as twisting his top-rims, giving impossible height to upperworks and spars, or occasional unwarranted leads to running rigging, Bruegel on the whole convinces one that he knew at first hand the

Fig. 21. Jacobo di Barbari, 1500.

Fig. 22. (*a*) 'Flight', Bruegel; (*b*) 'Hulk', Bruegel.

ships which he drew and painted. Among these it is easy to recognize the descendant of the fifteenth-century carrack, now grown solid as to upperworks, and with mainsails no longer cross-seamed, not so superior in size to her auxiliary canvas (Fig. 23). But from the same artist we find ships not otherwise very different, which have the whole forecastle brought a deck lower, probably galleons; and others which, although they carry a low-down ramming beak like a galleon's and have a mere remnant of forecastle crowning their round bows, are certainly not galleon-built. These latter, together with some of Bruegel's forecastled ships, are notable for their construction, suggesting that, to compensate for great height and breadth, their upperworks are of very light, probably clinker-worked planking; for they have vertical cleats or 'skids', not only to stiffen their tumble-home, but set at short intervals throughout their length or in some cases along their 'castles' only (Fig. 22 *b*); in fact, highly reminiscent of those on the clinker-built cog of 1400. This style of building is especially found in

Flemish or Spanish ships, and would appear to have been peculiar to shipbuilders of the Spanish Netherlands; in short, it seems not unreasonable to identify the beaked vessels of Bruegel as 'hulks' of Antwerp. But something of the same kind is to be seen in a small ship of *c.* 1525, drawn by Holbein, in which the narrow planks may well be clinker-worked above the

Fig. 23. Carrack after Bruegel.

main-deck; and the hulks of north Germany were possibly in this respect like the Flemings, though it was the round bow which evidently gave its distinguishing feature to the characteristic Antwerp 'hulk'.

A very different type illustrated by Bruegel is the round-sterned *fluitschip* or 'flight' of Holland (Fig. 22*a*). Here the round planking is brought up to a wing-transom below the tiller-hole. Incidentally this feature is not

quite characteristic of the 'flight', as we know it. It is absent in all earlie and in most later specimens, though one of the variant renderings o Barentz' ship of 1595 shows again a 'flight' with a wing-transom under th tiller-hole. No contrast, however, could be greater than that between th square, upright 'castles' on Bruegel's 'hulk' sterns, rising straight from abaft the mainmast (Fig. 22 *b*), and the tapering, shelving, twice-counterec stern of his 'flight', with its half-deck and poop; the latter of these two ship is even further advanced in the new fashion than his more ordinary square

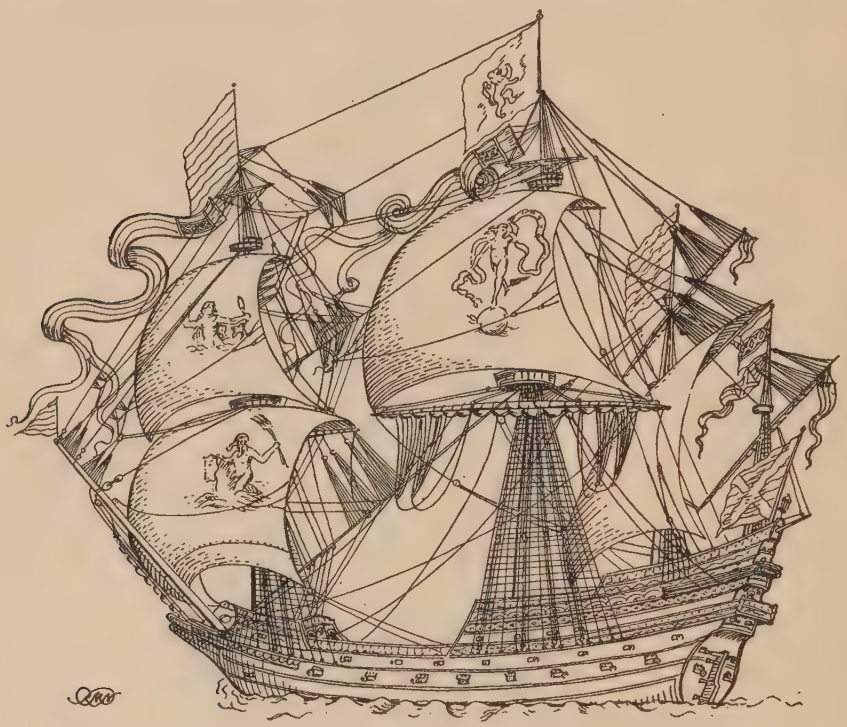

Fig. 24.

tucked ships. All alike, however, show the series of almost parallel curvec lines which now repeat the sheer of the wales at intervals up to the topmos rail of the 'castles', giving unity to the whole design and balancing th curves of swelling canvas under sail.

The ships of Guillaume le Testu, 1555,[1] show even better than Bruegel' how greatly they might vary in detail; for scarcely two of them are alike and yet all agree in this repetition of sheer. Some of Le Testu's ships hav stern and quarter galleries, not yet usual even in big ships. In others h shows 'skids' like those of the Florentine carracks, or else elongate

1 *M.M.*, Vol. II, p. 65.

channel-brackets which remind one of the grouped 'skids' of 'W.A's' *kraeck*. These are clearly shown in Vincent Vulp's Hampton Court painting,[1] and again in an engraving after an old model which Fürttenbach[2] calls a 'caramuzzal', but still better in the destroyed Utrera ex-voto model.[3]

Another feature as constant at this period as the repeated sheer is the lightening of the cage-work by cutting rows of arched openings there; a reminder of the time when the 'castles' rose on uncovered stanchions. This arcading is to be found in Genoese carracks, as early as Carpaccio's St Ursula paintings (Fig. 9) and the Warwick Pageant. Another survival of an older epoch is the use of pavisses and armings of cloth, which defend the sides and tops. The ship is still regarded as a sea castle, of which the round-tops are turrets; and though the presence of great guns may now permit of battle at long range, the defence of the vessel against those who would storm it with small-arms remains so important that the pavisses and nettings of the fifteenth century are increased rather than diminished in the century following; each top being given its sheaf of darts or even its swivel guns.

By 1550 or thereabouts we begin to find the space between the rooftrees of the nettings at the waist covered with gratings. Such gratings eventually led to an additional deck there (Fig. 18, (9) and (10)); much in the same way that the quarter-galleries, which at first were quite open, or at most given ledges to support temporary awnings or nettings, were later to be roofed in, and finally incorporated into the stern, thus repeating the history of 'castles' and awnings.

Among improvements in rig which took place after the middle of the sixteenth century, the most important was the fitting of topmasts which could readily be struck and sent up again, thus making it safe to carry them higher and increase the area of canvas set. This is claimed as a Dutch invention of 1570, and English pictures suggest that we were a little behind foreigners in taking advantage of the improvement to cut topsails bigger: by the end of the century, however, a new balance of sail was reached everywhere, in which topsails were no longer mere auxiliaries (Figs. 20 (6) and 24). As these grew too bulky for neat stowage on their still comparatively short yards, it became customary to furl them in an upright bundle in the top, an anchor-like outline being given them by the parts on the yard and the turned-up clews, resembling stock and arms.

Except for possible experiments in 'Ships Royal' near its close, lateens remained the aftersails of the sixteenth century. Very characteristic are the crowfooted lifts of these—though, curiously enough, Bruegel still shows some mizens that were 'changed' in galley-fashion and required the time-

1 The Embarkation of Henry VIII at Dover. 2 *Architectura Navalis*, Ulm, 1629.
3 *M.M.*, Vol. xv, opposite p. 414.

honoured *orses* and *ostes*. Outliggers, though not universal, remained in fashion, though the fitting of these abaft mizen-tops for lateen topsails, as Bruegel shows them, was a passing phase. A single boomkin for the fore-tacks is often seen, especially in the older type of ship. In the newer galleon with its low beak, a comb-cleat on the underside of the knee of the head superseded this. Another characteristic detail, common from *c.* 1450–1600, is that of shear-hooks for cutting an enemy's rigging. Similar hooks, but blunt, were fitted to the yard-arms of fire-ships to serve as grappling-irons.

In spite of many pictures which ought to have shown them, some details remain tantalizingly obscure. Not only are we left without knowledge of how the clues of a course were dealt with in taking in canvas, but no artist has shown a lowered sail being gathered up by its martnets, though that can more easily be imagined. A few prints and paintings show us the big cringles along the foot of a course or a bonnet, to which the 'lee-fang' was made fast when one wished to bring this within arm's reach of the men waiting to lace on or cast off a bonnet; but again no artist has shown a 'lee-fang' in use. 'Unfinished' effects, such as doing justice to these passing details would demand, might perhaps have outraged the artistic taste of the time.

Throughout the two centuries covered by this paper little applied decoration was given to ships. A gargoyle-like beast's head at the bow and a certain amount of panelling, pierced work, or arcading in the 'castles' are all that we find until the very end of the period, when a touch of carving may be added, especially on the galleries and the beakhead.

The ship itself, however, to say nothing of gay banners, streamers, pavisses, waistcloths and occasional painted sails, was brightly coloured as to its upperworks; at first in plain colours with occasional armorial devices; and more especially after 1500, in a geometric patchwork style similar to that seen on the screens and roofs of old churches. Vulp's otherwise incredible ships in 'The Embarkation of Henry VIII' show this fashion at an early stage when it had scarcely spread beyond the rails; later we find it on the spaces between them, and it is seen carried to extremes in the 'Ancient English Shipwrightry' MS., where also we find specimens of the foliated scrolls and strapwork which replaced it.[1] In spite of being thus put into motley, the ships seem to have preserved their dignity by remaining very simple in outline, and depending for their shapeliness entirely upon the lines of their construction. It would be difficult to prove that they were less beautiful on that account than their ornamented and gilded successors of the next age.

1 Pepysian MS., Magdalene College, Cambridge, and L. G. Carr Laughton, *Old Ship Figure-heads & Sterns*, Pls. 1, 5 and 6.

A PROBLEM IN NAVAL ARCHAEOLOGY

'ΕΜΒΟΛΟΝ' OR 'ΠΡΟΈΜΒΟΛΟΝ'?

By G. B. Rubin de Cervin

DURING excavations, which were being carried out by hand-operated dredges in Genoa harbour in 1597, a heavy piece of metal was brought to the surface which showed, after it had been cleaned from the mud and the many marine incrustations, the bronze cast-head of a boar (Fig. 1). Some historians at the time promptly classified the relic as being

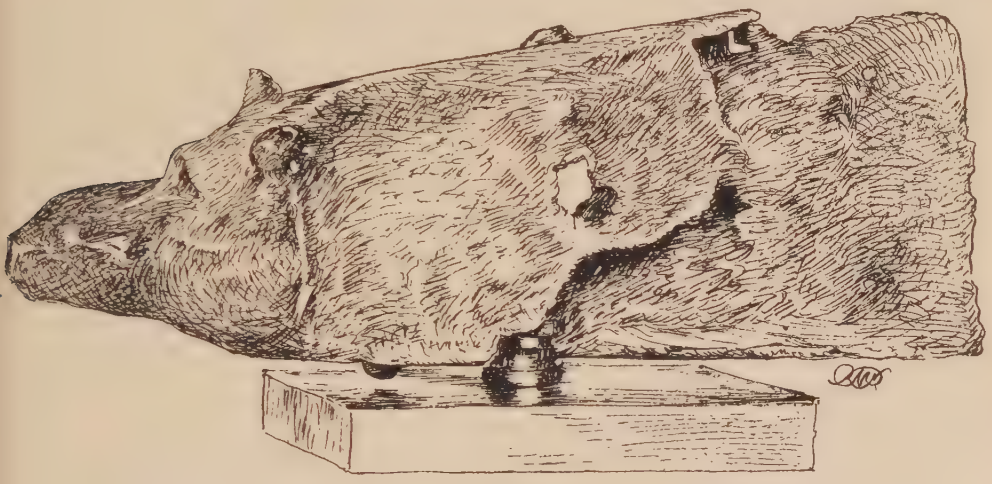

Fig. 1

the *rostrum* of a Roman galley, others going as far as stating that it could have belonged to one of the ships of the Carthaginian chief Mago who, supposedly between 206 and 205 B.C., had attempted a landing on the Ligurian coast. The fragment was then placed on the wall above the main entrance of the City Armoury, together with a Latin inscription commemorating the event, and there it remained until 1833, when it was removed to the 'Armeria Reale' of Turin, where it was duly labelled as a Roman xystus.[1] Archaeologists in the past frequently studied this finding, but they somehow seemed to have always overlooked its true naval

1 *Armeria Antica e Moderna di S.M. il Re d'Italia.* No. inv. A. 89. Torino, 1898.

importance. It is mentioned in fact by the Comte de Chesnel,[1] who calls it a *rostrum*, while under the same heading it appears in the Dictionary of E. Saglio.[2] One other author[3] went a step further, and inferred that the boar's head, being a recurrent feature on many Etruscan coins, this bronze might have belonged to an Etruscan rather than to a Roman ship. This last supposition omits the fact that this same symbol occurs on the coins of many other Italic and Greek mints, such as those of Latium, Campania, Lucania, Apulia, Crete and Aeolia. Quite recently this bronze was exhibited at the Genoa Harbour Show (February–July, 1953) and described in the catalogue as a 'rostro di nave Romana'. It is regrettable that at the time when the fragment was discovered, not one piece of wood, to which the bronze was supposedly fixed, or any fragment of the craft itself, were preserved, thus making its identification rather uncertain. The archaic mould of the cast, which compares unfavourably with those other fine *protomae* which have come from the Nemi ships, may indicate a somewhat early workmanship, it being still one of the rare archaeological pieces so far yielded by Genoa, for little is known of the Roman period of this town, her expansion, both political and commercial coming much later and well after the fall of the Empire. The harbour, however, was much favoured as a naval base by Cornelius Scipio during the Punic campaigns, or at the time of the wars against the Ligurian tribes (148 B.C.), until she became linked by land to the rest of the Italian peninsula by the two roads *Postumia* and *Aemilia Scauri*, an event which, for the time being, considerably reduced her naval importance.

On close examination the fore-part of the bronze shows a solid piece of metal, though immediately behind the head it flattens out into two slabs, each of about 1 inch thick. Part of the left side is torn away, while a large hole appears in the centre. The total length is 30 inches.

The official classification adopted by the 'Armeria Reale' of Turin does not seem a satisfactory one, the Greek term *ξυστόν* rather meaning 'a shaft of a spear' than the part of a ship. Such a weapon, in fact, is mentioned by Homer in the *Iliad* (vv. 387–677), when Ajax stormed an enemy ship brandishing a colossal spear which, it appears, was made of different pieces of wood tightly bound together and having a length of 10 ms.[4] Jal endorses such an opinion[5], but suggests that it may have been used as a sort of battering ram, while others[6] come to the conclusion that the xystus was a

1 *Encyclopédie Militaire et Maritime*, Ed. Le Chevalier. Paris, 1864.
2 *Dictionnaire des Antiquités Grecques et Romaines*, T. IV. Hachette, Paris, 1908.
3 F. Podestà, *Il Porto di Genova*, p. 490. Ed. Spiotti. Genova, 1913.
4 Helbig Wolfang, *Das Homerische Epos aus Denkmälern erläutert*. Leipzig, 1884.
5 A. Jal, *La Flotte de César*, p. 243.
6 Guglielmotti P. Alberto, *Storia della Marina Pontificia*. Vol. I, p. 117. Tip. Vaticana, Roma, 1886.

heavy beam which would normally be hoisted to a yardarm and, when in combat, lowered and slung at about deck level, it being then allowed to swing to and fro as a *vice arietis*. This supposition seems to have been inspired by a description, of doubtful value, left by the Roman historian Flavius Vegetius Renatus (fourth to fifth century A.D.),[1] an author of some repute in financial matters and in military tactics, but of limited knowledge in naval warfare, his books appearing, on the whole, as merely a digest of the works of other writers. How this cumbersome contraption could have worked, is difficult to conceive, and if we allow that it did ever exist, one wonders what serious damage it could have caused to the opponent's craft, other than piercing through his side screens or possibly smashing his gunwale.

The true purpose of this bronze piece may yet be another. In some part of the Mediterranean, it is not known where or when and possibly never will be, a sea-faring race developed the ἔμβολον or *rostrum*, the weapon which was going to influence naval warfare for many centuries; fragments of ancient monuments and coins from dead cities, throw some light on the subject, so that we know at least that it was a submerged projection, which could take different shapes, but invariably was finished off with a sharp point so as to smash through the hull of the enemy ships and cause them to sink. Furthermore, it is quite conceivable that, had those ships been fitted with the *rostrum* alone, the impact of the collision would have been tremendous, with the inevitable result of damaging the ramming vessel's own bow. To prevent this from happening, the ancient mariners very wisely invented the προέμβολον in the shape of a second projection forward of the stem and above water-level, which obviously was designed to act as a buffer. Pollux,[2] in fact, explains that this fitting was: *eius, carinae justa proram terminus est, quod proembulum vocatur; quod antem sub ea parte, rostrum dicitur.* It should be noted that in our case the snout of the boar is flattened out and evidently not meant to pierce through any hull at all. Exactly how this very piece was fitted to the prow, is a matter open to speculation and we can only imagine that a board was inserted between the two slabs and these snugly held to the stem. Other similar examples are to be found on the coins of Phaselis (Lydia, *circa* 446 B.C.) which bear very distinctly the boar's head protruding from the prow of a galley and well above water-level, besides the fragment of a Roman sculpture which was unearthed in Rome near the Arch of Constantine in 1889 and is at present in the Capitoline Museum.[3] It shows part of the bow of a ship (Fig. 2) with the familiar boar's

1 *Epitoma rei militaris.* Ed. C. Lang. Leipzig, 1885.
2 Pollux Iulius, *Onomasticon.* Ed. E. Bethe, v. 1, c. 9. Leipzig, 1900.
3 Settimo Bocconi, *Collezioni Capitoline*, p. 292, No. 20. Ist. Graf. Tiberino, Roma, 1950.

head just about where the broken-off stem would rise and then turn inwards. It is believed that it belonged to a fountain set in the gardens of Nero's huge *Domus Aurea*.

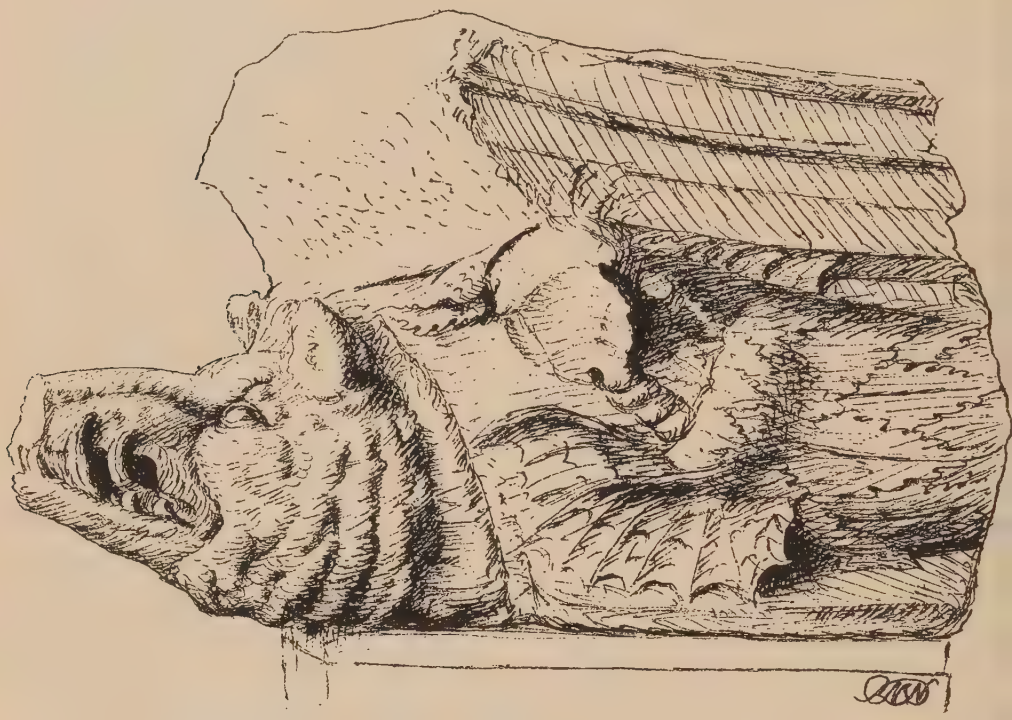

Fig. 2

FREDERICK JOHN HORNBY

By A. G. E. Jones

ONE of the junior officers in the *Terror* in Sir John Franklin's last expedition was Frederick John Hornby. He was the fourth son of the Reverend Geoffrey Hornby, Rector of Bury. His mother was, before marriage, the Honourable Georgiana Byng, the sister of Viscount Torrington and a connexion of the unfortunate Admiral Byng. Hornby was born on 1 July 1819, presumably at the Rectory which adjoins the Parish Church at Bury.[1] He was baptized in the Parish Church nearly a year later, on 27 May 1820.

Nothing is known of Hornby's early years and schooling. He may have been educated at Bury Grammar School, which then stood next to the Parish Church; his father was *ex officio* Chairman of the Governors of the school. He may have been educated at Winwick Grammar School. His cousin, Geoffrey Phipps Hornby (1825–95) was educated there as a day boy before being sent to Mr Southwood's academy at Plymouth, and his uncle, the Reverend James John Hornby, was Rector of Winwick.[2]

The naval tradition was strong in Hornby's family, and he was not lacking patronage. His grandfather, the Reverend Geoffrey Hornby, at one time the Rector of Winwick is said to have served in the Navy before taking Holy Orders. His uncle, Captain Phipps Hornby (1785–1867), who had been on half pay since the close of the Napoleonic wars, was appointed Superintendent of the Royal Naval Hospital and the Victualling Yard at Plymouth in 1832. His uncle on his mother's side, the Hon. Henry Dilkes Byng, was appointed in 1833 Captain of the Ordinary at Portsmouth. His elder brother, William Wyndham Hornby, who had been in the Navy since 1825, was a mate; he was promoted lieutenant in 1833.[3]

Hornby entered the Navy as a volunteer of the First Class at Devonport on 30 January 1834. He entered the steam vessel *Dee* commanded by his kinsman, Commander Edward Stanley, R.N. This vessel cruised in the Channel, and Hornby was discharged on 27 May 1834 when she paid off at Hamoaze.[4]

Two days later Hornby was appointed to the *Wolf*, 18, sloop, again under Commander Stanley. In this vessel Hornby served on the East India Station, cruising between Trincomalee, Penang, Malacca, Singapore, Madras and Calcutta.[5] Hornby was appointed midshipman, and on 7 July 1837 he was moved by Admiralty Letter into the *Conway*, 6th rate, Captain

C. R. D. Bethune.* The *Conway* was then at sea on her way to Port Jackson, New South Wales. In this ship Hornby served in Pacific waters and the Indian Ocean, and visited New South Wales and Van Diemen's Land. For four months in 1839 he was lent to the *Pelorus*, 16, sloop, Commander Francis Harding. Hornby was discharged from the *Conway* on 1 March 1840.[6]

On 6 May 1841, as a midshipman, Hornby joined the *Belle Isle*, a 72-gun ship, under the command of Captain John Toup Nicholas. This was a fortunate appointment as Captain Nicholas was well known as a very smart officer. Hornby served in the *Belle Isle* as a midshipman and then mate on the Plymouth and Mediterranean stations until 16 October 1841. Captain Nicholas condemned her as no longer fit to serve as a ship of the line, and she was converted into a troop transport. Captain Nicholas was then given command of the *Vindictive*, 50, which fitted out at Portsmouth. Hornby went with him; his character on discharge was 'good'.[7]

The *Vindictive* was shortly afterwards transferred to the East India Station, but Hornby left her. His uncle, the Hon. H. D. Byng, was posted to Jamaica early in 1842 as Commodore 2nd Class, and went out as a passenger in the Royal Mail Company's steamer the *Tweed*, hoisting his pendant in May 1842, in the *Magnificent*. Hornby was posted to that ship. Commodore Byng transferred his pendant to the *Imaum* in July 1842 and in the following year was invalided home.[8]

About the end of 1842, Hornby was posted to the *Formidable*, 84, Captain Sir Charles Sullivan, then serving as the flagship of Vice-Admiral Sir Edward Owen, Commander-in-Chief Mediterranean. Captain Sullivan was succeeded on 1 June 1844. The *Formidable* served on the Lisbon and Mediterranean stations until the end of 1844, and Hornby visited Gibraltar, Barcelona, Port Mahon, the Tagus and Malta. Early in January 1844 the ship visited Athens and Piraeus, and on 22 April 1844 Hornby was transferred by warrant to the *Queen*, and was paid off at Portsmouth on 11 July.[9] He seems to have spent the next seven months on half pay.

It was early in January 1845 that Sir Robert Peel's government announced that it would equip another expedition to complete the search for a North-West Passage. The announcement was no sooner made than hundreds of officers and men, the pick of the Navy, volunteered to serve in any capacity or rank. Captain Sir James Clark Ross, who had returned from his famous Antarctic voyage, was offered the command. He declined it, but privately informed Sir John Franklin who applied to the Admiralty and was given the command of the expedition. Captain F. R. M. Crozier was, at the request of Sir James Ross, given command of the *Terror*, and

* This officer published, in 1847, *Views in the Eastern Archipelago.*

Commander James Fitzjames was appointed commander of the *Erebus* and third in command.[10]

The selection of the officers was left largely to Commander Fitzjames. The Admiralty considered three of the officers chosen by him to be too young, and Hornby was one of those selected by the Board to replace them. He was appointed mate on board the *Terror* on 4 March 1845.[11] Hornby already had some indirect connexions with polar exploration. His father's church at Bury contained a memorial to Lieutenant Robert Hood (who had lived in the neighbouring parish of Heywood); he had died in 1824 on Franklin's first overland expedition to the polar sea. One of Hornby's relations, the Reverend Hugh Hornby, was friendly with Lieutenant Henry Foster who had served under Parry in the *Hecla* in the voyage to Prince Regent Inlet in 1824–5, and who commanded the *Chanticleer* in 1828–9 when she visited the South Shetlands. Commander Harding, under whom he had served in 1839, had served in the *Griper*, Captain Lyon, in 1824, in the unfortunate voyage towards Repulse Bay. In the *Conway* in 1838 he visited Hobart, Van Diemen's Land, where Sir John Franklin was then Governor. When the *Erebus* and *Terror*, under Captain James Clark Ross, put in at Hobart in 1840, Sir John exerted himself to the utmost to make the time pass pleasantly for the officers and men. Hornby probably met Sir John in the same way in 1838.[12]

The junior officers of the expedition were most promising and full of life. The fact that Hornby was selected to form part of a difficult and hazardous expedition was proof of his general merit and rising qualifications. He had evidently given good service and was capable. He was a good officer and a good messmate. But he was a little disappointed at having to wait so long for his promotion.[13] Hornby had passed his examination for Lieutenant on 5 May 1841 while serving on the *Belle Isle*, but he was still employed as mate. His commission as Lieutenant was not made until 21 May 1846 when he reached the head of the list of 1841 mates—a promotion of which he never learned. He may have been handicapped by his stature and appearance; he was only 5 ft. 4 in. tall. Furthermore, at the time when he was needing promotion he had no one in the Service to help him.[14]

The *Erebus* and *Terror* sailed from Greenhithe on 19 May 1845 with 134 officers and men. They were last seen at the end of July by a whaling ship in the north of Baffin Bay. Only the bare outline of the subsequent proceedings of the expedition is known.* The ships passed their first winter at

* It was not until 1859 that its fate was definitely ascertained by Captain F. L. McClintock, sent out in the *Fox* by Lady Franklin. Hornby's family contributed £130 to this searching expedition, and Miss Hornby collected £13. 4*s*. 0*d*. in small sums. (McClintock, F. L., *The Voyage of the 'Fox' in the Arctic Seas*, p. 401, London, 1859.)

Beechey Island and in 1846 apparently sailed southward through Peel Sound, and on 12 September were beset off King William's Land. In the next year and a half they remained beset and advanced only twenty miles. They were abandoned in the ice on 22 April 1848 and the crews began their disastrous march southwards to the Great Fish River.

It is probable that Hornby was still alive at this time since his sextant* was found among the equipment abandoned as superfluous at Point Victory on the north-west coast of King William's Land. The officers and men possibly proceeded in parties. But scurvy had weakened them, and in the words of the Eskimo, 'they fell down and died as they walked along'. Though his remains have not been identified, it seems probable that Hornby died on King William's Land in the summer of 1848.

Hornby's parents never learned of his fate. When his father died in 1850, no trace of the expedition had been found, but hope of the existence of survivors had not been given up. Hornby's mother went to live at 5 Euston Place, Leamington Spa, with his sister. She died there on 23 July 1856, at the age of 68, after a short illness.[15] When she died the last record and relics had not been recovered, but Dr John Rae had learned enough from the Eskimo to determine the fate of the expedition. The Admiralty had officially presumed his death by removing the name of Sir John Franklin and his officers from the Navy List on 31 March 1854.[16] If he had returned, he would, together with Lieutenant Thomas of the *Terror*, have been promoted to the rank of Commander.[17]

Hornby's death is recorded on a stone tablet in Bury Parish Church: 'To the memory of/Frederick John Hornby, Lieutenant, R.N./Fourth Son of/the Revd Geoffrey and the Hon^ble^ Georgiana Hornby./He was born July 1st 1819/and sailed in May 1845/in H.M.S. '*TERROR*'/with the Arctic Expedition/under Rear Admiral Sir John Franklin./Never alas to return./Not our will but thine, O Lord, be done'.† His name was given by McClintock to a point on the southern coast of King William's Land, but subsequent changes in the map have expunged it.

Besides Hornby's sextant, there can also be seen at the National Maritime Museum a silver fork that belonged to Hornby (lent by Major H. F. McClintock, son of Admiral Sir Leopold McClintock) and one of his silver spoons. They were all found on the west coast of King William's Land.

* This instrument was supplied by Messrs E. and E. Emanuel of Portsmouth, and was probably bought in 1841 when the *Formidable* was fitting out there. It was then a very up-to-date instrument, and the metal parts were covered with leather for work in low temperatures. It was presented by Lieutenant Wyatt Rawson, R.N., to the Royal United Services Museum and can now be seen at the National Maritime Museum (Markham, A. H., *Life of Sir John Franklin*, p. 273.)

† His name is also recorded in Frederick Street in Bury.

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HUMBER KEELS

By John Frank

The following article on the Humber Keel has been written by Mr John Frank of South Ferriby. Mr Frank was at one time master and owner of a fore-and-aft rigged keel and he has written this account of the building and working of one to perpetuate the knowledge, which he has of this type of vessel and also to try and help the Humber Keel Trust, which has fairly recently been formed to preserve one of these craft and keep her working under Sail. A hull has been bought and reconditioned, money is now wanted for mast, rigging and sails, etc. Local merchants have promised her cargoes when she is commissioned. Therefore if anyone is interested and would care to subscribe to the Trust they should communicate with the Hon. Sec., Mr P. G. Warham, 13 Triangle Drive, Corby Park, North Ferriby, East Yorkshire. Mr Frank has asked me to edit this very excellent description of a Humber Keel, as he thought that his 'Scholarship' was not of a high enough standard for the *Mariner's Mirror*. I may perhaps add that it gave me very great pleasure to help in a very small way, and that I found there was practically nothing I had to alter. All the sketches in this article have been made up and redrawn by Mr H. J. B. Hill from those originally supplied by Mr Frank. H. O. HILL

THE Humber Keel is supposed to be descended from the oldest line of sailing ships in this country. It was a very useful cargo boat and could carry a good weight, more than any other ship of its size. The length and breadth of the vessel were governed by the size of the locks through which it had to trade—they were known as Sheffield size, Manvers size, Barnsley size, Driffield size, and so on. The vessel was very strongly built, chiefly of oak, with pitch pine decks and memel bottom.[1] It has a squarish sail with two bottom corners which were very long, and were known as the legs of the sail, some carried a topsail. I have heard of them carrying a togarnsail (top gallant); from 1800 to 1900 some keels used to carry a bowsprit, especially those working Louth and the Lower Humber, some even went to sea.

One George Turdale, who lived in South Ferriby and died about 1900, used to tell my father about going to London with a keel loaded with tiles. A favourite saying was 'When we were flying sail in Yarmouth Roads.'[2]

The light mast made it easy to lower when running a bridge on a river or canal. The vessel carried a fair amount of gear for handling the ship such as boat hooks, stowers, derrick pole (Fig. 1), and one big sweep oar to help her round in light wind ('. . . toiling in rowing; for the wind was contrary

1 Memel is a very tough wood which came from the Baltic; it is very like pitch pine but not so red. It is obtained in lengths up to 70 or 80 ft. and up to 16 in. square. It is called Memel as it was shipped from the port of that name.

2 This means anchored in Yarmouth Roads, with sail partly set, waiting for a breeze. A saying to call attention to the fact that the speaker had really been to sea.

unto them', St Mark vi. 48). It was a work of art to sail a keel well. It has now become a lost art. A good skipper had to know where to anchor with safety drawing up to 7 ft.; he had to ride where he could get sleep. It was no fun having to steer all night. He had to know where he could pick up a cargo that would pay him. He was always in competition with his friends, either for freight or for a turn to discharge at a wharf. If ten keels loaded for a place, the one that got to his destination first got discharged first, or there was a noise. This made the old hands bring out their tricks which had been handed down to them for generations. It also made the young skippers do some daring feats. It was a grand sight to watch a race; it was better still to be a competitor.

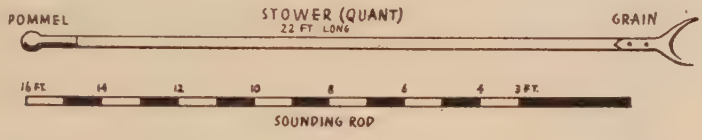


Fig. 1

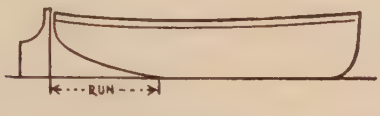


Fig. 2

Keelmen did not vote for a better standard of life, they worked for it. We had our fun which made it all the more pleasant. One old keelman with a slow old tub said if his ship got into a good run of tide she would stop in it as long as any body else. Another old keelman said: 'He who doth with patience stay, shall have a fair wind every way.' There was an old song which the sanders used to sing:

'There's Dandy Jack in Swinefleet Rack and Walt's on Cobblers Hill,
My eye, my eye, says Bugle eye, I've been a jolly fool,
I been right up the Howden dyke when I might have stopped at Goole.'

I will try to describe what a keel was like. Perhaps we had better go to the carpenters yard and order a new keel. When we have found out who has the best terms to offer, having got this settled (the price before 1914 was about £4 per ton on what she would carry) (100 ton £400), you had to say what length of run (Fig. 2) you wanted, usually about 24 to 28 ft., how much sheer, how high you wanted your coamings, size of sail, size of leeboards and how you wanted your boat built. Then you had to keep going to see there was no bad wood going in; you want the top strakes to be free from

shakes and knots so that they will look well when scraped and varnished. The carpenter will first lay the keel, then he will fit the stem and sternpost (Fig. 3). Then comes the foot hooks (footocks), the quarter timbers and the bow timbers, then strakes to determine the sheer. The binds (Fig. 4) are two

Fig. 3

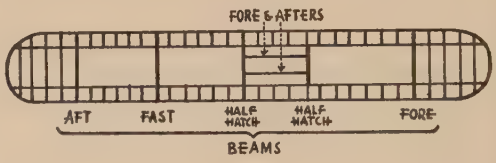


Fig. 6

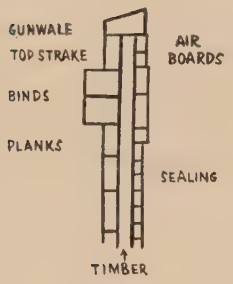


Fig. 4

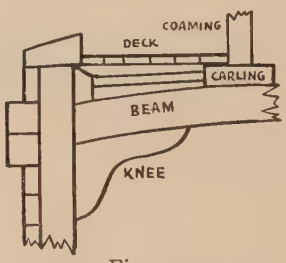


Fig. 7

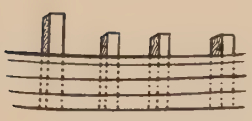


Fig. 5

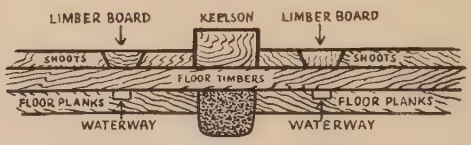


Fig. 8

strakes running the full length of the ship; these are thicker than the other planking to act as a sort of rubbing strake. The binds are 3 in. thick and the planking 2 in. thick; having got our planking on, we saw off our timber tops but leave some sticking up (Fig. 5) to moor the ship; some timber heads are put in after, then they are easier to renew. Now we want some beams (Fig.6) We fit a piece of oak from the after beam to the fore beam on either side; the distance from the side of these determines the width of decks. Then comes the coaming plank, a huge piece of wood some 2 ft. wide 3 in. thick and about 40 ft. long, the full length of the hold; then the gunwale, again of oak then the deck planks, which are pitch pine (Fig. 7).

Inside the ship we have about five planks in the bend of the bilge, which are of oak and fastened right through, from inside to out, with long bolts riveted, well clenched. We have the sealing and floor, which latter is called the shoots (Fig. 8). The floor planks on either side of the keel are scooped ou

rabbeted to form a channel for water; just above this are the limber boards (Fig. 8), which are laid loose to clean out the water way. One feature about a wooden keel was the tremendous knees (Fig. 7) to each beam. We are now ready to put up the bulk heads. In the after bulkhead there is a door, which is called the hold door, it leads from the hold into the cabin when the hold is empty. It is usually in two pieces, the top can be opened to let air into the cabin when the hold is not too full. Then there is a slide on the other side of the bulkhead to put coal into the cabin locker. The fore bulkhead was not quite the same as the after one, it was built about 3 ft. from the floor of the hold; the bottom part (leading into the fore peak) had a loose front, so that when loading timber long lengths could be pushed under. Some ships used to keep spare gear such as tar brushes and buckets, shovels and ice plates in the fore peak. Ice plates (Fig. 9) were to put in front of the bows of the ship when sailing amongst ice, they were usually in three parts, one for the stem and one for each bow, held up by lashings.

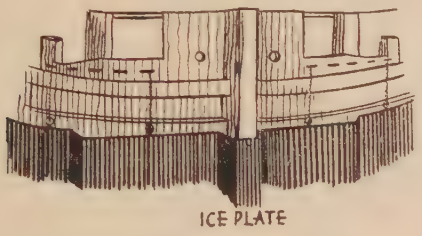


Fig. 9

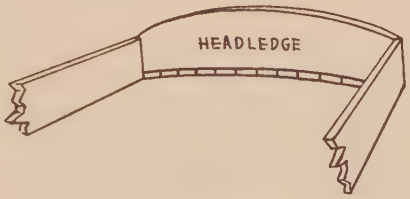


Fig. 10

We are now ready for the deck planks which could look very well if laid in good straight-grained wood; then the headledges (Fig. 10) were fitted on top of the deck plank ends and dovetailed into the end of the coaming planks. The ship is now ready for the hatches. We first put in a beam which is known as the half hatch beam (Fig. 6); it is a loose beam about 10 ft. from the mast beam. On this is put two fore and aft beams fixed to each side of the lutchet (Fig. 11) or tabernacle; in between these the mast is lowered; they act as a guide. From the fore and afters are the half hatches; in between the fore and afters is a loose board known as a mastway board. Then come the whole hatches which reach right across the hatchway; they are made of two carlins. On these are nailed grooved and tongued boards, the outer boards being made of hard wood; there is a hand hold to lift the hatch with. When the hatches are on, the whole lot is covered with three tarpaulins, taking care to let them lap from aft to forward so as not to wash up, then the whole lot is battened down and lashed with a cover lashing. There are quite a few fitments to be put on deck, the cabin hatch was of a quarter round shape,

the top half made to slide back over the bottom half—two loose slides in the front. The forecastle hatch was made differently, it was a low hatch like a box lid, some had a small skylight fixed. This had to be a good fit as it was often smothered with water for hours on end. There were two pumps, one at either end of the ship; next to the head ledge there were two chainpipes on the fore deck, also near the head ledge there were the winch posts bolted to the fore headledge, also the tack rollers (Fig. 12), or winches, for heaving the tack

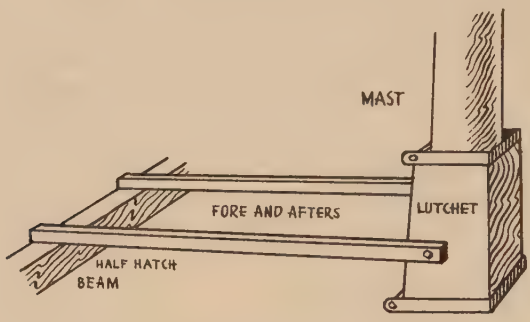


Fig. 11

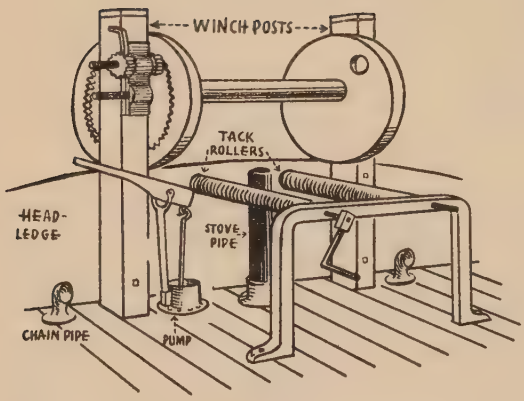


Fig. 12

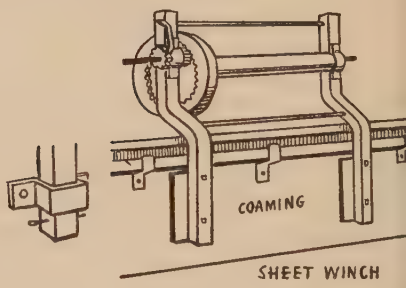


Fig. 13

of the sail down. There was a spare anchor on deck, also the big heavy windlasses across the ship right in the bows. The after deck was not quite so much of a junk shop as the fore deck. There was the winch for heaving up the sail which was fixed to the headledge; the two sheet winches (Fig. 13) were fixed to the coamings and the headledge. On the hatches we have lashed a derrick pole for unloading cargo. One sounding rod (Fig. 1), 16 ft. One canal tiller (Fig. 14), made of iron to work over the rail so that the rudder can be got hard over in a lock, deck brush and mop. Mop usually

home-made from old stockings or jerseys. On the fore hatch there was a big towrope, a harbour rope at each end, 60 fathoms of cotton warping line, 30 fathoms of single horse line for horse hauling up the canals, and various odds and ends of rope. The reader can imagine what a lot of tidying up it took after a ship was loaded. There was not a lot of rigging to a keel, by rigging I mean standing and running rigging; there was the fore stay, topmast stay, two shrouds on each side, the backstay and the halyards. The mast was stepped in a tabernacle which came up right through the hatches, the heel of the mast was about level with the deck—rounded at the heel to make it trip easily when lowering. Some masts had a square flat top

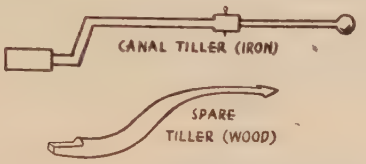


Fig. 14

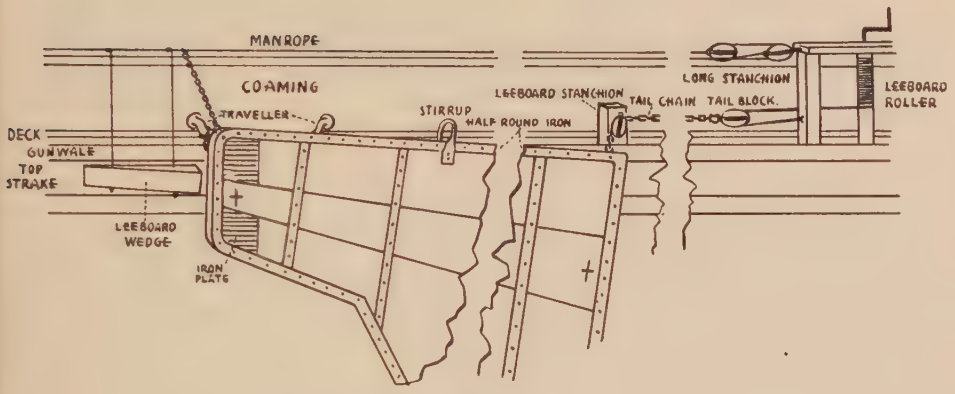


Fig. 15

and some had a pointed top with a truck. The mainsail was shaped so that the tack became the sheet and the sheet became the tack when the ship went about, it had usually two rows of reef points.

We must not forget the leeboards, a keel will not come about without them; a pair of leeboards is the correct term because neither board will change to the other side. A leeboard (Fig. 15) was usually about 13 or 14 ft. long, and the width of the after end was approximately the height of the ship from keel to gunwale; it was a man's job to make a good one. Along the top edge of the board you had an oak plank which was $3\frac{1}{2}$ in. thick at the fore end, tapering to 2 in. at the after end; all the planks were tapered the

same way, and were then riveted together, so many rivets and so many dowells (iron); some people had what is called a cutwater (Fig. 16) on the bottom edge. This enabled them to get more board under them in shallow water. The board was hung by two chains, the head chain and the tail chain (Fig. 15). The head chain was a piece of anchor cable, which was threaded through the leeboard and fastened with a toggle, which was then nailed with clout headed nails to keep in position. The other end of the chain was fastened to the traveller, which was fastened to the coaming plank; by moving this chain along the traveller you could alter the centre of effort slightly. You could do the same by heaving the board up or lowering it. This was done by the tail chain—this was a light chain, which was fastened through the board, then up through a block on the leeboard stanchion (Fig. 17) on the gunwale edge to another block (the tail block), then a wire from the long stanchion to the tail block back to the roller or winch.

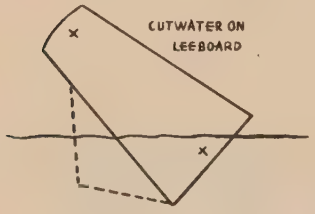


Fig. 16

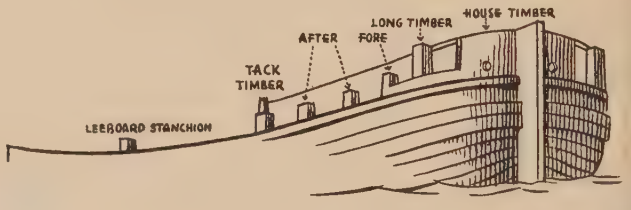


Fig. 17

On the top of the board, about the middle of the balance, there was what is known as the stirrup (Fig. 15); this was put on to lift the leeboard when taking it off, which had to be done when going up the canal. At the fore end of the board, at the top corner, there was a small eyelet; into this was fixed a small piece of chain, the other end was fastened to the manrope (Fig. 15). The object of this was to keep the tacks and sheets from getting trapped between the board and the side of the ship; on the top edge of the board, on the inside, there was fastened a wedge about 2 ft. 6 in. long tapered on the underside. When the leeboard was lowered this wedge pushed the back edge of the board off and made the board come to the ship's side and stopped it from skating. (Skating is when a board will not keep to the side.) Fastened to the manropes and hanging down the ship's side is another wedge, called the leeboard wedge (Fig. 15). This is a sort of guide to push the ship off a wall or stop the board from getting be hind anything like a pile and stopping the ship. Leeboards could be used for sounding in shallow channels; when it touched the bottom the tail block dropped on deck with a bit of a thud, which gave warning, you hove the

board up a bit and put the helm down quickly and came about. Also, when coming down a fast stream head-first, like the River Hull, you used to let go a weight over the stern, something like a 4-stone weight. Attached to this was a piece of light chain, then attached to the chain you had a piece of line to each quarter. The procedure was to pull the line tight nearest the bight of the river, this pulled her stern out of the bight. As her head shot onto the bight you lowered the board on the ness side;[1] this pulled the ship straight, but you had to be quick to get the board up or you would pull her head right up behind the ness. This could only be done at just before, or just after low water and only with a light keel. The leeboard was useful when moored to a canal bank to hold the ship off. A keel carried a good heavy anchor and chain in use, and one spare one, 30 fathoms of chain to each anchor. When travelling along a tidal river, like the Trent or Ouse, one had to do a lot of anchor work, which is called driving with the tide. The

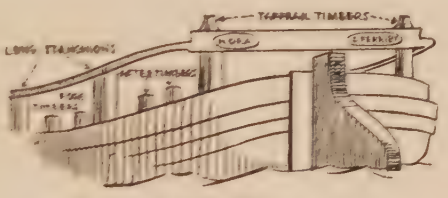


Fig. 18

anchor crown is kept just nibbling on the bottom, this enabled the ship to be steered. Distance travelled depended on the strength of the tide. When dropping in a very narrow river with the anchor, too much chain tends to pull the vessel on to the ness, too little, she drops into the bight. An anchor for a keel should be one which was well tried for holding, the crown of the anchor should have plenty of weight in it. The flukes should have a nice radius, and the bill should dig in well; the peas should not be too big or they would take too much weighing from a clay bottom, they should be a nice heart shape to hold a rope in order to turn the anchor over when it had picked up a cable or mooring (Fig. 32). There are a lot of telegraph cables across the Humber and, when driving with the tide with no wind and the anchor just trailing on the bottom to give a steerage way, one was liable to get the anchor fast in a cable laid on the river bottom. This was the method of getting the anchor clear: the shank should be a fair length, about 4 or 5 ft. with a stock about the same length; it requires a good fore-lock and pin also, and a good threadscrew to hold the pin in the stock. Some ships had a fast stock for the working anchor and a loose stock for the spare.

1 The ness side, the side on which the bank projected into the river.

A good boat is an essential part of a keel's gear; we must have one, or we shall not be able to get ashore for our medicine. It should be about 12 ft. long and about 4 ft. 6 in. beam, full in the bows, fine aft and good flat floors, and as square in the bilges as you can bend the timbers without breaking them; a 12- or 14-stone man wants to be able to jump about and stand in the bows to get the painter on, in a strong tideway it wants to lay comfortable alongside. It should not throw water in when towing, but plane. It is a dangerous job bailing a boat out in a lot of swell. The late George F. Holmes was the best designer of a cob boat[1] that I have ever known; of course his designs were for yacht's dinghies, only about 8 or 10 ft., but they were sensible boats.

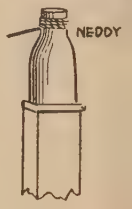


Fig. 19

A keel took all the rigging off when he wanted to go up a canal and be towed by a horse. Some horses knew the job as well as the horsemarine.[2] They knew how to start a loaded ship, they went real slowly into the line until it came tight, then they just lay into the line as if they were laying down, no amount of whip would make them hurry.

The post wheel, which was put into the lutchet (Fig. 11) to haul the ship by, was called a neddy (Fig. 19).

The Eagre and the keel

The Eagre or Aegir, which no doubt is a name brought by the Danes, because where it occurred the Danish sailors believed the God of Water to be angry. It came at low water on a spring tide chiefly in dry weather when there was no fresh. It was a great danger to inexperienced boatmen. Keels have been overturned when they have turned tideways to the Aegir. It could be safely negotiated if the head was down stream to meet the on-coming wave. After the tidal wave, which came first, there were a lot of smaller waves which were called the whelps. The procedure with a keel at anchor was to have the anchor short when it was about half an hour before flood. If it was a still evening or morning you could hear it coming 10 minutes or more, and you got the anchor up and turned the keel round facing down river and let her go down stream to meet it; it was something like a wall of water rolling on top of the last draw of ebb, and when it was over the tide was running up like a millrace. You can perhaps imagine a keel with its stern at low water and its head at nearly high water about 6 ft. higher than the other end. The mate slacking away some anchor chain, the skipper watching the bows

1 The name given to a keel's boat.

2 Horsemarine was the name given to all men looking after the horse on all canals in the Midlands.

If the Aegir was not expected to be very big the captain could meet it stern on. When the Aegir was just about to catch the ship up he got the anchor off the bottom and gave her a little way with the help of his stowers and he could ride on top of the wave for quite a long time because the tide running over the ebb gave the keel steerage way. This called for some skill as it was a rather tricky business.

A trip to Grimsby

We are to load bricks at South Ferriby for Grimsby. We are alongside the brickyard at Ferriby Sluice, sails tied up; we lower our leeboard on to the bottom to keep the ship steady and put a plank on deck with one side resting on the gunwale edge and the other on deck. We then put some bricks between the plank and the coamings, and put a gantry plank onto the gunwale edge and another stepping plank at the side of it. We then wheel the bricks on barrows, fifty on a barrow. Three men to wheel and one to stow. By this method we could load 4000 per hour, so we got 30,000 in during the day of $7\frac{1}{2}$ or 8 hours. If we wanted to be away on the afternoon early we had 2 gangs of 4; this got us done by dinner time.

Having got water on board we begged a bag of coal from the brickyard then went down to the lockpit. To pen out easy we want boat, tiller and stop rope all on the opposite side to the anchor.[1] The wind is S.S.W. so we have a fair wind most of the way. We get away early to avoid having to go round by Paul bight,[2] and down to leeward in Hull roads. We run down the river past Barton then Barrow Haven, where my great grandfather was put out of business by the M.S.L. Railway Ferry Service. (He was the ferry owner when passengers went by sailing ship from Barrow to Hull.) We now pass Newholland Pier on to Goxhill haven, and run off the land to clear Skitter Ness; the water has now fallen about 2 ft. and the ebb is running fast. We get out the sounding rod and find 12 ft. of water, and shoaling we ran off about a third of the way across the river. We got into 8 ft. 6 in., that is near enough for a keel drawing 7 ft., then we deepen water as we come to the top end of Whitebooth roads; we now come up close hauled into the wind and take off the lee rigging to make the sail flatter. We cannot lay by on the starboard tack, so we lash everything down and knock all batten wedges in tighter, put a fathom or two of chain on the forecastle hatch, and get some leeboard down as soon as there is enough water. We haul our bowline, which is a piece of rope fastened to the luff of the sail and fastened to the bitt head. The swell is beginning to make, spray is flying into the sail, tops off the

1 This arrangement gives the most room in the lock.

2 The main channel is through Hull roads and into Paul bight, at high water a short cut can be taken by those who know.

waves are lapping amongst the oars and stowers on the hatches, we are getting into the ebb which is running against the wind across from Paul bight, we fetch the no. 10 buoy on the Holm side, we sail down the Holm side until we are opposite Killingholme lights, then Lee Ho the skipper lets her fall off and eases the sheet a little so the mate can get the shrouds hooked on. Skipper then puts the helm down. When she gets head to wind the fore part of the sail comes back, the skipper lets go his sheet, the mate starts to wind in his tack and lets the pawl go off his starboard tack roller, he then lets go his bowline and winds away at his port tack. As soon as the mate has got his tack nearly down the skipper hauls his yard round, but the mate must get his tack down before the braces are finally made fast. About this time skipper kicks his leeboard pawl and lets the board run down, just as the sail fills and falls on to the leeboard, he then winds in his sheet, the mate hauls his bowline and comes aft, to wind up the weather board. We are now standing to windward off Killingholme light, we are getting wet and driving down the river, we reach right under the land at Killingholme Haven then stay again. We are in smooth water now and on the starboard tack. We are just passing the monument to the Pilgrim Fathers who sailed from this point. We can just lay along the land now past Immingham Dock and inside the Burcum sand, we know that it is no use trying to turn up the Grimbsy basin, so we go below the entrance and stay again and reach into the basin on the port tack, then shoot as far as we can with the sail dropped on the hatches. We then let the anchor run to the bottom, and get the boat alongside. We run a line to the buoy about 40 fathoms away and then bring the boat back and start winding on the winch, 'mangling' keelman used to call it, till we get to the buoy. This time we hang a rope to the buoy instead of anchoring, while we run the line out again; this time it will reach the lockpit 60 fathoms. We have saved a pen in so we get into the dock and start to warp the ship up the dock. The next day we discharge by throwing three bricks at a time, four men for about eight hours, and stack them on the quayside. By night we are ready for another load; we try to get a load in but there is not much doing, only timber and pitprops and occasionally a load of matches for Hull, and so the job goes on year in, year out, always some fresh ship coming into port.

The sloop

The Humber sloop was built the same as a keel but the rig was different. A sloop was a lot easier to handle than a keel in a tideway, it would turn up and down the Ouse or Trent (lower reaches) at low water, the mate had only to go forward to work the foresail bowline; if in a lot of swell he could stand on the hatches and do the job or, if only a little boy or the skipper's wife,

it could be rigged from aft. The sails were hove up by winches on either side of the mast.

The fastest sloops were the ones that fitted the Market Weighton canal, they were about 65 ft. long, and 14 ft. 10 in. wide. The handiest size sloop was the Menvers size, which were short and narrow. They were a lot easier to boat about,[1] and would turn in about three times their own length. I have often thought some ingenious keelman rigged the first sloop from the material which he had in hand. I may be wrong, but the first sloops on the Humber were rigged with a flat peak, and looked like the keel's sail with the tack uppermost. On the seal of the Humber, Ouse and Trent Insurance Company there is a sloop with such a sail. Before 1914 all sloops on the Humber had a flat peak and strong tiller lashings to keep them out of the wind. It was not until after this that the sloop began to be handy with well cut mainsails, which completely altered the sailing qualities by reducing the amount of after canvas.

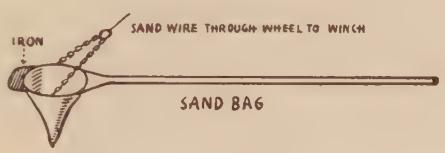


Fig. 20

If you go back to the old Billy Boy you still get the flat peak; there is no doubt that the Billy Boy is a relation of the keel. I often think the keel of the old days had a sharp bow. You still find evidence of this when there is a good length of lockpit. On the Wilham the old Lincoln catch[2] was sharp in the bows, with an overhanging stern. In an old engraving which I saw of Sleeford some years ago the keel sail was similar to those of the Humber, but the bows were sharp. On the Aire and Calder canal, where length is no object, the old flyboats had sharp stems similar to the Lincoln ketch.

There used to be quite a lot of sloops sanding in the river, they used to go up on the flood to Goole or sometimes 5 or 6 miles above. The skipper felt the bottom of the river till he felt clean sand, then he dropped anchor and tied the sails up and rigged a Gin wheel on the boom; then the boom was hove well in the air and a wire was put on to the winch, forward through the block and to the bag (Fig. 20). The bag or pan was a leather bag fastened to a long pole, the hoop at the mouth of the bag was shod with iron. There was a chain across the mouth of the bag with a ring in it, which was attached to the sand

1 'Boat about', to move about by man power.

2 The Lincoln catch was a keel about 64 ft. long, sharp at bow and stern and very shallow draught, about 5 ft. 6 in. The tiller came in over the rail.

wire to the winch. The skipper then went ashore to look for a gang, four men, two at each side of the winch; at low water was the best time to sand.

The ship was riding at anchor with a hard sheer and a line on to the anchor leading aft which is called a sand spring, the mate stands aft near the rail with the pole in his hand, and sticks the bag down to the bottom, aft; he presses on the pole and yells Steady on the bottom. The four men wind on the winch and trail the bag on the bottom and then up; if we are lucky it will be full of clean sharp sand. Once we get a clean place the hole will keep running full of sand. Sometimes there is a lot of warp[1] rolling into the hole; then the anchor has to be got up and moved to another spot. When we get a bag of good sand the skipper, who is standing on some planks inside the coamings, grabs hold of the bag full of sand and water and tips the lot into the hold. This goes on until flood, then the crew pump water out. It has been estimated that one-third of the haul is water; this goes on for two ebbs, sometimes more. Then at the next high water the ship gets underway and goes down to the end of the river, Blacktoft or Cliff End, if it is Trent sand; there they stop for another ebb and flood, all the time the sand is draining and every hour or so they have to pump the water back to where it belongs. The sanders had names for places where there was sand to be got, such as Onion Bed, Sand Hall, Clot Hall, Howden Dyke, Swinefleet Rack, Air Mouth and so on.

Paul sanders

There used to be another race of sailors, called the Paul sanders; they used to go down to Paul Sand and ground the ship on the sand bank and throw the sand in with a sand tool; this was also hard work, but there was not quite so much water. The old ballast lighters used to go for this, and ballast sailing ships and steamboats in the docks. Paul sand is very fine, nearly like flour.

Spurn gravel

There was yet another lot of sanders or gravelers—the Spurn gravelers; these men used to go out on to the edge of the Binks,[2] ground their vessels, take on about eight or ten fishermen, and carry in a whole cargo of gravel in about four hours.

The method of operation was to take about six pans (Fig. 21), plenty of shovels and two box horses. Rig the horses (Fig. 22) on the sand at the side of the ship, then put a plank across these and another leading up to them; in the deck of the ship were three holes with lids, these were filled in and

1 Warp is mud deposited by the tide.

2 The Binks was a gravel bed extending out to sea from Spurn Point.

bolted when not in use, and were called Spurn holes (Fig. 23). The fishermen filled the pans with gravel, and some carried them on their shoulders up the planks till their shoulders were level with the decks, then they tipped the pan over one of the holes and it went through into the hold. This was a dangerous job, if the sea got up one could get a washing coming into the river. This job required low ebbs and fine weather. If there was more ships than could get fishermen they used to go up the Gut and ride in the den. The Trent gravelers used to get gravel in the old days with a bag similar to the sanders in the Ouse and Trent. They used to get gravel from anywhere above Torksey, but it is now done with steam cranes and grabs. The name for Trent gravel has always been Haul ups. Sloop *Providence*, G. W. Burkill, 1906, 95 tons sand £.5. 19*s*. 6*d*. from Goole.

Fig. 21

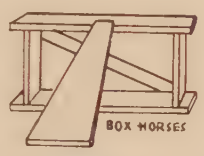


Fig. 22

Fig. 23

Rigging a derrick pole

To unload a cargo of coal or sand or stone, before there were any cranes, one had to rig a derrick. We need a pole, a gin wheel, strop (rope), a chain with three rings, one in the middle, one wire, two guys, and a pair of task hooks (Fig. 24), set of baskets and barrows. A set of baskets was two for fillers, one for going up or down and one for each wheeler, also a barrow for each wheeler. A good gang used to discharge ten tons per hour of sand, about nine of coal.

Stowing a foresail

When the foresail is lowered there is about 2 ft. at the bottom without any hanks (Fig. 25). We roll the foresail up, keep pulling the sail tight from the leach and luff. Then, when it is rolled up tidy, we wrap the foot over the top of sail; this stops water from draining into the sail.

Tying up the mainsail

We first lower the peak, then put six tyers on the boom, the longest tyer forward, let them hang loose. We then lower the main down a little way, pull the loose foot over the boom, and lower the main right down; this leaves the peak a bit of way up. We then pull the leach on the same side as the foot, keeping it tight from aft to foreward, and lower the peak, still keeping

the leach tight from aft to foreward. The sail is now on the hatches with all the leach and foot hanging over the boom. We now push a little sail through from just under the gaff to form a sort of a bag, and heave the gaff up a little way at the main halyard, about 1 ft., then roll the belly of the sail up into a nice tidy bundle on top of the boom, tight with no reefpoints showing, and lower the gaff on to it. We now take hold of one end of the tyer each, the second from the mast, exchange ends over the gaff and both pull and lift at the sail, the foot of the sail completely covering the leach and fitting tight under the gaff. We now go round under the boom again and tie, and do this with all the other lashings till the sail is tidy.

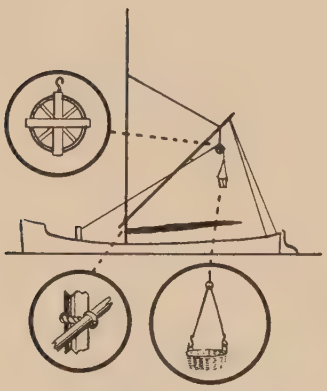


Fig. 24

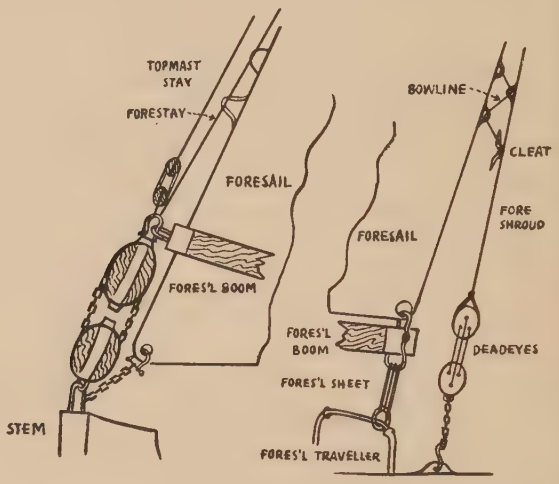


Fig. 25

Coiling up ropes to look tidy

All ropes on the hatches of keels and sloops were coiled up from the outside to the inside, and not like a lot of yachtsmen who like to make ropes look pretty by starting in the middle with a tight coil and finishing at the outside. Keelman used to make doormats like this from sennit.

We start on the low side of the hatch with the end and work round the inside; big towropes used to have an eye, but small ropes used to have a bowline knot tied on them. When they were wanted the ropes were coiled according to the way they were laid in spinning, either left- or right-handed. By pulling the rope from the middle it never got foul or pulled the whole coil overboard.

Stowing anchor chain below

In the forecastle of a keel there were two lockers known as chain lockers (Fig. 26). They reached from the ceiling to the floor, and the front was made up of loose slides; they were on either side of the stove. When we put the chain below, one went below and stowed the chain in layers from side to side of the locker, then when we had to let go the anchor in a hurry the chain would come out easy and not get foul. The locker which we used had a space underneath for sticks for the fire, because the chain was not often all below at once. There used to be an old saying amongst keelmen to anyone who did not learn very well, 'You don't know the yard arm from the beef kettle halyards'.

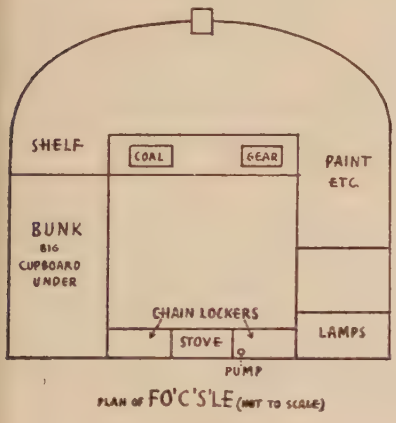


Fig. 26

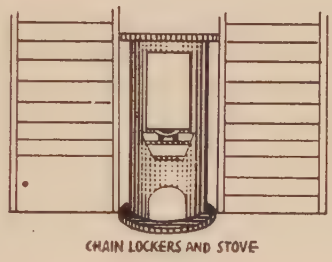


Fig. 26A


Fig. 27

Fig. 28

In very old keels the way into the forecastle was up a pole with wedges nailed on the side (Fig. 27); as most of the cooking was done forward, it is easy to see what a job it would be to carry the beef kettle (Fig. 28) in and out of the forecastle for water which was in the water cask on the cabin deck, so he had a pair of hooks on a bit of line to haul the beef kettle on deck. The water cask was lashed on deck on the cabin deck; you used what was called a dipper if you wanted to get water out, like the milk girl used to get milk out of tins before we had milk bottles.

Running

It requires some skill to make a good job of running a bridge with a strong ebb. You wanted to be at the bridge when it was high enough for you to sail through. It was a calamity if you got there too soon, and if you were messing about too long the bridgeman got uneasy, also the traffic on

the top of the bridge; Keadby Bridge was a good bridge to run because it was very wide; with a sloop you could make a board into it and stay and come out on the other bank if the wind was ahead.

In the middle of the Humber off Ferriby Sluice is an island known as Reads Island. It is seven miles round the banks. Then there was the foreshore, which grows enough grass to fatten about 400 head of cattle. To get all these cattle on the island in the spring and off in the autumn is no mean task. For this a sloop was rigged with a gangway across the foreside of the mast, another down into the hold and a loose gangway to the shore. You could get about thirty fat cattle in the hold at a time. With a reef breeze and a hold full of bullocks blaring it was a job turning to windward; it was worse with only about fifteen or twenty beasts on board: they would all dash forward, into the wind she would come and the rudder would come nearly out of the water; then you had to go in amongst them with a stick and drive them back. If the ship rolled the poor beggars could not hold their feet. Sometimes they would take a load up to Selby and Brough or Hessle and occasionally to Hull ferry-boat dock for Monday market.

Lock penny

It is customary for a keel when going up a canal to take a handfull of coppers, for every lock or bridge. He throws ashore a penny, usually it is a woman who had to leave her washing up or cleaning to come and open the bridge. If a keel has to stop and then start up again it entails a lot of trouble. If the bridge is open so that we can sail right on, how much less trouble! Usually the man at the bridge house worked on the canal or in the drains near the canal.

ICE BREAKING

Fig. 29

Ice

It was a difficult job to handle a ship amongst ice. We have sometimes spent a whole day getting down to the lock, 500 yards, with about 1 in. of ice; no keel would break it if she was loaded, and a wooden keel used to be cut badly if you tried to force her through. We used to rig the derrick pole in front of the ship and lash the boat athwart the bows and put the mate in to roll the boat and make a wave to break the ice (Fig. 29). An iron ship would break

any thickness if you loaded her aft till the bows came out of the water, then she would get on top of the ice and break it down.

When the wind was blowing into a creek or haven which was too narrow to turn out we used to kedge out. This was a job which needed a little thought; you had to get your kedge down on the tide side of the creek or you would end up on the point. For this you had a small anchor about 3 ft. in the shank; to this you fastened a warping line, and one payed away while the other took the boat. When you had got to the end of the line you threw the kedge overboard, and then hove the line tight. When you were sure that it would not come home you let go your ropes and hove away. If you were smart you could get under way off the kedge, if not you had to let go the anchor to keep from drifting back into the creek.

Tonnage plates

On the stem and sternpost of a sloop and keel was fixed a pair of plates known as tonnage plates; they were an accurate pair of scales. You took your new ship up to the Canal Company's yard and with a lot of weights they loaded your ship, then they calculated what you could carry. Keelmen called this getting weighed. When you wanted to take your plates you added the two plates together and divided by 2, this gave you the correct weight of the vessels cargo:

'Forward'	110
'Aft'	100
	210
	105 tons

the difference between salt water and fresh was about one ton.

It used to be said that if the keelman and his wife and children all walked forrard with the man who took the plates, then went aft with him, quite a lot could be gained. Also it was a rule not to pump an old ship out till the plates had been taken. One old foreman at a works wanted to knock five tons off my freight because he said that the ship was listed to the side of the plates. I started putting the hatches back on and he climbed down. I had on board a cargo of red sand (land sand) with no water in it. On the other side of the stem and sternpost was marked in feet the water the ship drew; these had to be visible to any Canal Company's officers on account of other traffic. Sometimes they were cut in 3 in., sometimes 6 in., always Roman figures.

Barton sloop regatta

Many years ago there used to be an annual keel regatta from Hull and Barton; this was a great event. I never saw a Hull keel race, but my father said it was a fine sight. The winner used to have a cockerel on his mast-head for the year. I do not know whether it was part of the vane or fixed on the top, but this was his distinguishing mark. All the merchants of Hull gave prizes: the boat builder would give a new boat valued £5, grocers gave food, and some gave money. The keels raced round the Middle Light vessel off Gy if the tide was on the ebb during the morning, if it was the other way they raced round the upper Whitton. The crew consisted of five men and they had to be at anchor in line off the Humber dock. After 1918 the Regatta was revived at Barton-on-Humber. The wood sloops had half an hour start on the iron ones. But it took some doing. A tug was hired for the day to go with them, this was carried on until there was not enough sloops to make a race. It was a battle of wits all the time because the Humber is a river of rushing tide and slacks; if the first ship made a mistake the rest of the fleet profited by it. Alas, this is all done with now, there is only the annual yacht race from Brough to Grimsby. I reckon it would be worth entering with a one design, but with a handicap class there is not much fun, unless one happens to be in a slow boat. Then it is fun making the fast boats look sharp. In the Humber a man that knows his tides is at a great advantage.

Keel cabin (Figs. 30 *and* 31)

Under the cabin floor Sheffield-size keels had a tap to let water in to get under Pottery bridge on the Sheffield canal. One of our captains was annoyed by about twenty children asking if they could come on board, but he found that by letting them crowd forward he could get the ships head under the bridge without letting in so much water to pump out. The timbers in the bunk were lined out with match-board, but in all the other cupboards the timbers were left bare. The forecastle (Fig. 26) was built in the bows of the ship and was a very small place, but there was plenty of cupboard space. There was a seat between the bitt heads which went down to the bottom of the ship, through the decks in the spare cabin side, two doors opened and you could get right to the side of the ship; then there were shelves aft from the bottom. Forecastles were warm and comfortable if the decks were tight at the foot of the bunk; there was a shelf for the mate to keep his clothes on. Most forecastles were built of grooved and tongued board.

Most keelmen used to take with them, when they went from home, a basket of food, a white pillow slip with their clothes in. The basket was about

as big as a basket which anglers used with a lid with the handle in it fastened with a peg. Most keelmen were clean men and good-living men. It was not very often you saw an untidy keelman, but occasionally you saw an untidy ship; they were mostly the people who did not live on board only for about one night. There were some very honest men until firms began to cut out the little man who owned and sailed his ship. He could only do this by employing a lot of cheap labour and running his ships threadbare. There are not many factories now who employ their own ship because the firms who own a fleet of ships can do the work cheaper by negotiating for back loads. Perhaps the motor engine will alter this state of affairs.

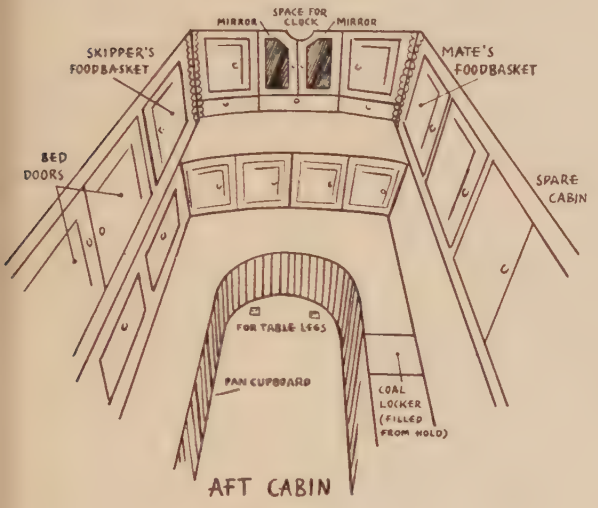


Fig. 30

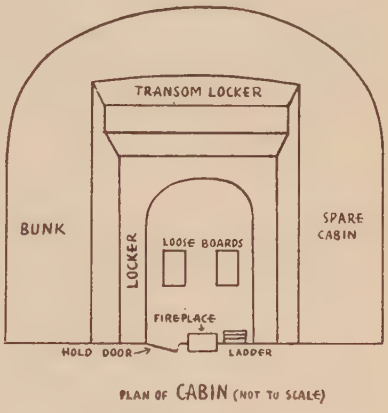


Fig. 31

All the keels and sloops now have either engines or are made into lighters and are towed about. There is not much difference between the weight of the rig and the weight of an engine. I expect the keel sits more by the stern which is all to the good as it gets the propeller into the water.

In the old days keelmen used to be paid by the thirds, and this system was the fairest of any system that has ever been in existence. If a freight was 3*s.* per ton, the owner took 1*s.* per ton, the skipper 2*s.* per ton; he paid all expenses and found a mate. It was reckoned before 1914 if a keel paid £100 in thirds for the owner it was doing very well.

In the year 1932 I took away from the brickyards of South Ferriby, Horkstow and Burton Stather to Hull and Grimsby 2,075,500 bricks; it was not a good year because twenty cargoes were for Grimsby, I paid thirds to my father, £193. 8*s.* 4*d.* The freight on bricks to Hull in 1914 from

Ferriby Sluice to Hull was 3*s*. In 1932 it was 5*s*. 6*d*., it is now 15*s*. 6*d*., and still going up. I do not know how far it will go but I know it has killed all brick trade from Lincolnshire to Hull, a trade which employed about ten keels. In the year 1924 I took away from the brickyards 2,500,000 bricks, two loads of coal from Keadby to Saxby bridge, one load of sand from Burton Stather to Barton, and one load of coal from Keadby to Burton Stather. I had two good mates and I was saving up to get married; we did some remarkable feats, for my mates were as keen as I was. Besides all this we managed to keep the ship painted, decks scrubbed white and all varnished work scraped, mast scraped and hoops, boom and gaff. If we had a day waiting for a kiln to cool we used to get our paint out; that was in with our two-thirds, the owner paid for the hold painting and cabins.

Some old keelmen carried a pickle pot. It was an earthenware pot and they used to mix salt and water till an egg would just float on top. In this way they used to keep a piece of pork or beef, which they said was very good with the ship being always on the move.

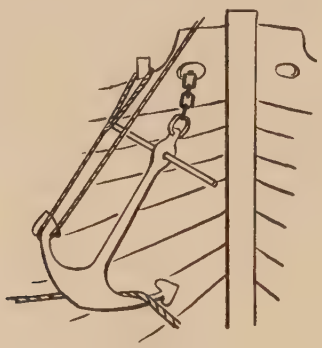


Fig. 32

Some superstitions

Some of the old keelmen believed it was unlucky if a person lost his hat whilst sailing. It was unlucky if a hold ladder was the wrong way up. It was unlucky if a keelman went through the rigging between two shrouds. It was unlucky if the stowers and boat hooks were the wrong way round on the hatches, that is with the grains forward instead of aft.

Some keelmen believed it to be unlucky to sail on Sunday, they said money earned on a Sunday went to the Devil on Monday. It was unlucky to sail about with a foul anchor. If you were short of wind you could get a breeze by whistling for it or by throwing a halfpenny overboard, but it was unlucky to throw more than one.

NOTES

THE ST WINNOW SHIP

The bench-end carving of my sketch is in St Winnow Church, beside the Fowey River in East Cornwall, where its maker had real shipping at hand. It shows a three-masted vessel in a storm, under foresail, with bonnet still laced on, and lateen mizen. Her stout mainmast has no lowered

Fig. 1

yard and sail; presumably these were left out as being too difficult to fit neatly into the design. The mariners lie at the mercy of the storm fiend, that shows a cat-like face among the lumpy clouds; but the sea is not too turbulent and St Winnow will help.

The ship is one big enough to have a mizen top, but the sheaf of darts in the main top is her only armament. The rigging is represented by main topmast shrouds and a single rope ladder as conventional main shrouds, while a main stay, though strong, has quite lost its way to the stem-head. The hull detail is vague, but one sees a hawsehole and the rudder, with a tiller shipped over its head.

R. MORTON NANCE

A COPPER PROCESSIONAL SHIP

While this processional ornament may not add much to our knowledge of ships of the fifteenth century, it is very interesting, and one must feel obliged to Mr R. Morton Nance for this welcome addition to the many pieces of evidence which his drawings and writings have brought to light or saved from oblivion.

First there is a new confirmation of the universality, at the time, of the so-called 'carrack' type, as invariably shown by the works of the major as well as minor arts. It is new inasmuch as, while elaborate and precious *naviculae* of the kind are not unfrequently met, such primitive productions of like objects had not yet ever been mentioned under the writer's knowledge. It thus adds a new subcategory to the list of evidence in that line.

This copper ship affords a good illustration of the way to deal with what one can notice when confronted with some naïve and somewhat crude piece of evidence.

In all likelihood the ship, in her present condition, was used, as suggested by Mr Morton Nance, as an incense *navette*, the socket being then fitted with a short pedestal to rest on a table. I can see but one alternative: a country imitation of the boxes in which very important persons used to keep their personal supply of spices (those *cadenas* about which points of precedence were raised at the court of Versailles, regarding who was or was not entitled to the use of the same at the King's table). Against this, one might say that there is no fixture suggesting that it could be locked or padlocked, a feature of *cadenas*, which were first designed as a precaution against poisoners.

That the ultimate use was not the original one is shown by the difference between the very simple manufacture of the hull and the elaborate decoration of the cover, which certainly is a later addition. The former use can hardly have been any other that that ascribed to it by Mr Morton Nance, a processional ship: the masts and sails, which could hardly have been omitted then, were, no doubt, removed on the transformation.

The salamanders point to some connexion with, or homage to, King François I, either during his reign (1515–47) or when he was Duke of Angoulême, a region not far from Noirmoutiers where the thing was found.

The avatar of the cowbridge-head arc is a good instance of 'reversion', one among the many tricks usual in representations of ancient ships from the hands of lay copyists, one of those one must always bear in mind when dealing with like materials (the most simple instance being the attribution to the stern of features belonging to the head, and vice versa).

The planking fastening, while not corresponding, as far as I know, to any process ever used in Western shipbuilding, seems pretty convincing, It is not likely that it came from the naïve coppersmith's imagination. Where did he see it? If nautical research was favoured with more manpower, one could perhaps elucidate the matter and determine what kind of joinery or kindred work provided the model. Like investigations lead, in most cases, to practically nothing; at the same time it happens that the least promising one unexpectedly leads to some precious clue.

L. G. LA ROËRIE

MR SAXBY'S NOTE ON THE BRIDPORT PAPERS

This collection appears to be similar to many other collections of personal papers of this period. It would be more helpful if the scope of the papers was indicated—letter books, logs, original papers and dates etc., and a fuller reference made to the official papers in the P.R.O. Assumptions of Bridport's incompetence seems unfair without expansion, and the references to the 'notorious Black Joke despatches' may not ring a bell to all readers of the *M.M.*

LINDSAY MACDOUGALL

THE CASE OF THE *EAGLE* PRIVATEER (FROM THE *ANNUAL REGISTER*, 1780)

29th March. This morning a session of oyer, terminer, and gaol-delivery for offences committed on the high seas, was held at the sessions house in the Old Bailey, before the right hon. William earl of Mansfield, lord chief justice of the court of king's bench, and Sir James Marriot, knt., judge of the high court of Admiralty when John Williams, officer of marines, and James Stoneham, boatswain's mate of the *Eagle* privateer, were put to the bar.

John Smith, first lieutenant of the said ship, deposed that they sailed from Bristol on a cruise in December last; that, being in the captain's cabin, drinking a bottle of wine on Christmas day, they heard a musket fired upon deck; that they sent a boy to enquire the cause, who returned with an unsatisfactory answer; that in a few minutes they heard the report of a second musket, which alarmed them very much, and they ran upon deck all together to see what was the matter; that they found the whole crew mustered upon deck, and that they had broke open the chests and supplied themselves with arms; that upon the captain going up to them, Williams, one of the prisoners, advanced with a blunderbuss and swore that if he ventured a step further than the line he had drawn across the deck, he would blow his brains out; that the captain instantly knocked Williams down, upon which the rest of the crew, seeing their leader fall and thinking he had been killed, returned to their quarters, and that Williams and Stoneham, the prisoners at the bar, were instantly secured, as being supposed to be the ringleaders of the mutiny; that the next day they fell in with the *Brilliant* frigate of war, and that they put twelve more of the rioters on board that ship to serve his majesty, after which they returned without any further molestation, peaceable to Falmouth.

Peter Reddish was then called, whose evidence corresponded exactly with Smith's. The captain was called three times, but did not think proper to make his appearance.

The prisoners in their defence called three evidences—the persons who acted as linguist, surgeon, and surgeon's mate—who made it appear that the mutiny in the ship did not arise from factious or dishonest motives in the prisoners, but from an honest detestation of the bad conduct of the captain, who, it appeared, had sailed with a privateering commission from the lords of the Admiralty and had robbed every vessel of whatsoever nation that he met with of inferior force. They each gave an affective narrative of the plunder of a Dutchman, whom they boarded under American colours and stripped of all the poor man (who was sole owner of the vessel) had in the world, though he was in a neutral bottom and in a fair way of trade. The poor Dutchman wept over his misfortunes, but did not know that the barbarians were Englishmen. They likewise gave an account of the plunder of a Danish ship and a Portuguese vessel in the same manner, and [said] that the method they used on these occasions was to throw a tarpaulin over the head of the ship, which bore the figure of an eagle, and to call themselves the *Black Prince*, American privateer. Captain Mackenzie, commander, and these witnesses separately declared that the prisoners had often told them they would rather be killed than join the captain in these iniquitous proceedings.

Several other very respectable persons appeared to the characters of the prisoners, but Lord Mansfield refused to admit them, declaring that the present trial did not at all depend on character, and his lordship then summed up the evidence in his usual way; and the jury, after retiring a few minutes, found the prisoners guilty, but at the same time earnestly recommended them to the king's mercy.

4th May. A respite till further signification of his majesty's pleasure was sent to the marshal of the high court of Admiralty for John Williams and James Stoneham, convicts in Newgate for mutiny. They were to have been executed this day. This respite was in consequence of notice taken of the case in the House of Commons. The captain, it seems, had been concerned in some illicit practices, and they had resisted going into port for fear of being pressed.

PITCAIRN JONES

HISTORICAL REVISION—THE CHATHAM CHEST

In an article in *The Mariner's Mirror*, Vol. 8, 1922, concerning the Chatham Chest under the early Stuarts, Miss I. G. Powell asserts that with regard to the Chatham Chest: 'The distribution of awards at this period can hardly be termed satisfactory.... The number of pensions granted was comparatively small; a small donation was the more usual allowance. Occasionally widows of men injured or killed in the service received donations, but they do not seem to have been considered eligible for pensions. We cannot trace the awards in any detail....[1]' The National Maritime Museum at Greenwich possesses an account book of the Chest covering the years 1637–1644, in which the income and payments are clearly set out by the clerk, Edward Hayward.[2] A study of this account-book goes far towards disproving Miss Powell's rather sweeping assertions, as I will show, not by following the modern trend of employing statistics, but rather by using quotations to point to the general nature of the disbursements during this period.

The first reform of the Chest, which was founded in 1590 largely on the suggestion of Drake and Hawkins, appears to have been in 1617. The Decree of the Commissioners of Charitable Uses touching the Institution of the Chest at Chatham, 1 May 1617,[3] states that: '...finding by Experience that by frequent Employment by Sea for Defence of this Kingdom...divers & sundry of the said Marriners Shipwrights and Seafaring Men by Reason of Hurts and Maimes received in that Service were driven into great Poverty Extremity and Want...Therefore and to the Intent Remedy might be had for the said several Mischiefs and a perpetual Relief provided for such as shall be hurt or maimed in the said Service...the said Masters Marriners Shipwrights and Seafaring Men then employed in the said Service...did then...voluntarily & partably give and bestow and consent to have defaulted out of their monthly Entertainments divers Sums of Money....' Thus it can be seen from the start that the actual means of relieving seamen is not specified, i.e. that pensions as such are not mentioned; and also that no mention is made of the wives and families of injured seamen. Since this is the case, I have found that the Chest was in fact extremely generous towards the widows of seamen, and that the number of regular pensions held by seamen was quite large. The fund also provided for ten old folk at the Sir John Hawkins hospital, e.g. 'Almsfolke in Sr. Jo. Hawkins hospitall £4. 10*s*.' 'To John ffawler Chyrurgeon, for unguents for ye almesfolkes limbes, & for looking to them, in their sicknes & lamenes, £1.'

The disbursements from the Chest are of several kinds, and the annual expenditure over these years varies between £5129 and £7435, with a balance varying between £125 and £484; these figures exclude the last year, 1643–4, when, on account of the Civil War, expenditure leaps up to £10,244 with a balance of £639. First, there are of course the running expenses of administration, e.g. 'Paid to Mr Symon Bayly of Canning Street London, for his boathire twice to Deptford, to fetch 200 l. chestmoneyes from Mr Tearne..., as also for portage from the Waterside, to his house, 3*s*. 6*d*.' Then there are payments to surgeons, e.g. 'To Richard Wye Junior Chyrurgeon to the Extraordinary att Chatham, for one Extraordinary Cure by him performed on Richard Cook Boatswaine of the St George..., being a cure pertinent to ye chyrurgeon at Woolwich, and exclusive in his charge at Chatham. £2. 10*s*.' It is evident from entries such as this 'To the Widow Roe of Chatham, 2nd May 1642 for 3 weeks, 5 daies, diett, lodging, & attendance on Launceford Gotham, whilst he lay in the Chyrurgeons hands. £1. 2*s*.' that the women of Chatham took sick seamen in as lodgers; and that when the men were cured, the Chest paid their expenses back to their own parish: 'To Launceford Gotham, to carry him back to the place where hee dwells, his diett being paid for, whilst hee was in cure. 6*s*.' As it was necessary for the men to appear in person at Chatham in order to draw their pensions, travelling expenses occur several times, e.g. 'To Nicholas Bonvile pentioner, 2 June 1642 to beare his charges back into Sommersetshire, being referred to the next meeting for an inlargement of his pencion. 15*s*.'

1 Pages 181 and 182.
2 MS. 9633. His original accounts, with the signatures of the commissioners.
3 Papers in the Chatham Dockyard records in the National Maritime Museum.

The men in receipt of pensions often received a donation also, e.g. 'To ffortune Hammond ye 15th of december 1637 for his presente relief. . . besides 6l. a year pencion £2.' And sometimes the way in which these grants are to be spent is specified, as in these two very attractive entries: 'To Samuell Porter one of the pencioners to the chist, the 6th of August 1638 to buy him a boat to earne his living being much necessitated through sickness, £3.' 'To George Bell one of the pentioners to the Chest, to buy him a trumpett to goe in ye ships to earne his living. £1. 10s.' The generosity of the Chest towards seamen is further illustrated by two cases where the illness for which relief was provided was not directly attributable to naval service: 'To Edward White, the 9th June 1642 with respect to his great expence, whilst hee lay sick of the small pox, wherewith hee was visitted. £2.' The Chest was equally generous towards the widows of seamen. It was always ready to pay donations in order that the deceased might be buried decently: 'To ye widow of Beniamin Jackson late boatswaine of ye Expedition, in full recompense towards ye buriall of her husband, who left her very poore & miserable, £2. 10s.'; and in one case the mother-in-law of the deceased received a donation of £3 'for the charge of his buriall'. However, it is evident that these widows were on occasion embarrassingly persistent and towards the end of our period this particular type of entry increases greatly: 'To ye Widow of Robert Griffin the first of december 1639 towards ye buriall of her husband, & to pay ye charges in the time of sickness, conditionally that shee never trouble the Chest any further £6.'

The impartiality of the Chest is amply proved by the entries for 1643–4, when one frequently finds this sort of thing: 'To John Burkett ye 12th of May 1643 in full recompense, having broke his legge, in a merchantship called the Edward & Elizabeth of London, in ye King & parliament's service, £4.' And not only were seamen given money for hurts received on board ship, but also for injuries incurred when crews were commanded to fight on land: 'To John Somes ye 29th of September 1643 one of the Prince's company, who received a shott on his left thumb at Topsham, in ye parliaments service, amongst other seamen, commanded thither, by the Earle of Warwicke, in recompense of the said hurt £2. 10s.'

With regard to Miss Powell's suggestion that many of the payments were gained through the influence of senior officers, I find only two such instances throughout the seven years under consideration, both very alike and of which I will quote one: 'To James Long 25th of January 1639 an ancient & decaid Carpenter, to beare his charges back to Kinsale, being noe waies capable of reliefe, producing noe Certificates for hurts in his Majesties service, this allowance being ye rather made, in reguard of the Lord Admirall's reference. £3.'

It is interesting to note that care was taken to see that the men merited the payments they claimed. It was necessary for the seamen to produce a certificate of injury: 'To James White 5th december 1642 for his present relief, being referred to procure better certificate for the hurt which hee pretends to have receaved in the Caesar. 5s.' and 'To James White, the 17th december 1642 in full recompense of his bruise, on boord the Caesar. . . having brought good testimony thereof, from capt. Jordan. £2.' Nor was payment made to men from ships which had not paid their collection money: 'To Edward Burley, Andrew Dickinson, and John Hosier, seamen. . . for their presente relief, to be recompenced further when the Chestmoney due from that ship, shalbe paid in by ye partowners each ten shillings. 7 december 1643. £1. 10s.'; and a further entry that £1. 10s. was paid to these three men 'being discharged off, by a designed allowance, when ye Employment Merchant, paide ye Collection money, at London'.

ANN P. MALE

THE STRAIGHT CHINESE YULOH

I agree with Miss B. Ward's statement that South China junkmen do not use a bent 'yuloh', and would comment further on lashings. Copper wire would only be used for lashings if obtainable cheaply or from a submarine telegraph cable fished up by 'accident'; rattan is the usual material.

Perhaps Miss Ward has noticed that the operator often uses the ball of the foot on the lanyard as a primary movement to give initial cant to the 'yuloh'.

In the Swatow area a short oar with a T-head, 4 to 5 ft. long, is secured by a rope grummet to a

long notched thole pin fitted into the wales on the starboard bow and/or quarter and operated as an oar with a final twist giving 'yuloh' action. I have tried and failed to handle these single-oared sampans and found that it is indeed a knack to maintain a straight course. The advantage appears to be that these craft can be given stern way.

It is necessary to be a skilled operator to handle the 'yuloh' with a choppy sea on the beam as the blade has a tendency to leave the water and the loom can strike one sharply on the face. The writer once had considerable difficulty in explaining away the black eye received under these conditions.

I. MACROBERT

CAPTAIN JOHN SMITH'S *ACCIDENCE*, 1626, AND *SEA GRAMMAR*, 1627

In my note on 'Limes, Lemons, and Scurvy in Elizabethan and Early Stuart Times' (*Mariner's Mirror*, Vol. 41, No. 2, May 1955), I stated that Captain John Smith followed up his successful *An Accidence for Young Sea-men*... of 1626 with *The Seaman's Grammar With the Plaine Exposition of Smith's Accidence for the Young Sea-men, enlarged*... in 1627. I have since been able to check the title-page of Smith's work of 1627, *A Sea Grammar*... from a surviving copy and give it in full below, together with that of his *Accidence*. All subsequent editions of *A Sea Grammar*... of 1627 were entitled *The Seaman's Grammar*... a fact which, no doubt accounts for the work being always referred to under that title.

The issues and editions of these two works known to me are those of:

1626	*An Accidence or the pathway to experience*...;
1627 (Anr. issue)	*An Accidence or the pathway to experience*...;
1636	*An Accidence for the Sea*...;
1627	*A Sea Grammar*...;
1652–53	*The Sea-man's Grammar*...;
1691	*The Sea-man's Grammar and Dictionary*...;
1692	(Anr. Ed.);
1699	(Anr. Ed.).

The full title of the 1626 edition of *An Accidence* is: *An Accidence or The Path-way to Experience. Necessary for all Young Sea-men, or those that are desirous to goe to Sea, briefly shewing the Phrases, Offices, and Words of Command, Belonging to the Building, Ridging, and Sayling, a Man of Warre; And how to manage a Fight at Sea. Together with the Charge of Duty and every Officer, and their Shares: Also the Names, Weight, Charge, Shot and Powder, of all sorts of great Ordnance. With the use of the Petty Tally.*

Written by Captain Iohn Smith sometimes Governour of Virginia, and Admirall of New England. London: Printed for Jonas Man, and Benjamin Fisher, and are to be sold at the Signe of the Talbot in Aldersgate Streete. 1626.

The full title-page of *A Sea Grammar* of 1627 is: *A Sea Grammar, With The Plaine Exposition of Smith's Accidence for Young Sea-men, enlarged. Divided into fifteene Chapters, what they are you may partly conceive by the Contents. Written by Captaine Iohn Smith, sometimes Governour of Virginia, and Admirall of New-England.* London, Printed by Iohn Haviland, 1627.

D. W. WATERS

LAUNCHING CEREMONY

A correspondent in *The Sunday Times* (28 Nov. 1954) quotes a recent book on Naval customs as saying that 'up to 1690 the ship's health was drunk in a silver cup then thrown overboard. This became too expensive and a bottle of wine was broken on the bows instead'.

It would be interesting to know the authority for this statement. If such a drastic change was indeed made in 1690, one would expect it to be recorded in Sergison's papers and to have been mentioned in Commander Merriman's volume of selections from them.

F. K. INGRAM

HERMIONE MUTINY

As a postscript to Mr J. D. Spinney's interesting article on this subject in *M.M.*, May 1955, it is worth drawing attention to some depositions printed in *Keith Papers*, vol. 2, p. 398 (Navy Records Society). These describe in dramatic language the charge brought by one Cornelius Corton against Benjamin (alias William) Brewster. At Naples in October 1800 Corton deposed that the said Brewster 'had more than once bragged that he had been one of the mutineers. . . and that he, with another man, had knocked down the boatswain of the said ship and thrown him overboard, that while he was swimming upon the waves they called to him to whistle and ride and be damned.' Edward Greenfield, mariner, also deposed that Brewster had been recognized as 'one of the bloody *Hermiones*'. Brewster denied that he had ever been in the ship under Captain Pigot and claimed protection on the grounds that he was an American citizen.

C. LLOYD

OLD NAVAL GUN-CARRIAGES

With reference to *M.M.* (November 1952, and August 1953): the earliest representations of English truck gun-carriages appear to be those in: *Fragments of English Shipwrightry late Sixteenth Century in the Pepysian Library*. Facsimiles are displayed, I believe, in the Science Museum, South Kensington, reproductions of them certainly are obtainable from that Museum. Readers of this *Journal* will find two of the fragments reproduced on a reduced scale on plates 4(*b*) and 6 in *M.M.* (April 1949). I should point out that '*Fig. 1. English Culverins of 1542 and 1590*', in the same issue is a redrawing of the Science Museum drawings of these guns which, it was found, were not to scale. Those which the present writer re-drew for the *M.M.* are to scale, the dimensions being taken from those given on the Science Museum drawings. This point is mentioned as in any reconstruction of Elizabethan truck gun-carriages it will be important.

Truck gun-carriages of 1620–23 are illustrated on the title-page of Mainwaring's MS.: *An Abstract and Exposition of all things pertayning to the Practick of Navigation* (Library of the late C. C. Scott, Esq., now loaned to the Institution of Naval Architects). This was reproduced as the frontispiece of *The Life and Works of Sir Henry Mainwaring*, Vol. 11 (Navy Records Society, 1922). These gun-carriages had four trucks. The front pair were considerably larger than the back pair. According to Mainwaring's MS. these trucks were 'little wooden wheels (being made without any spokes').

As he pointed out (under 'Carriages'), the Spaniards used 'the other' kind of carriage, i.e. a land gun-carriage, in their shipping. An example of a Spanish gun-carriage in a ship of 1535 is to be seen in the *Tunis Tapestries: Capture of Golleta* (*La Goleta*), *1535* (*M.M.* April 1949, pl. 12), and an example of a Spanish gun-carriage in a Spanish ship (galleass) of 1583–90 in the *Frescoes in the Sala of Batallas, Escorial Palace, Madrid*, by Nicolas Granello (*M.M.* April 1949, pl. 10).

To the best of the writer's recollection Furtenbach's great work on naval architecture contains at least one, and possibly more, illustration of a Dutch ship of the first half of the seventeenth century complete with guns mounted in truck gun-carriages. The writer regrets that at the moment he is unable to provide the full title and date of publication of the work by Furtenbach referred to, or to specify the characteristics of these Dutch gun-carriages.

D. W. WATERS

ANDREW BARTON AND THE *RED LION*

In the prospectus of the *Register or Chronicle of Butley Priory, Suffolk, 1510–1535*, edited by Professor A. D. Dickens and published by Warren and Son of Winchester a few years ago, the specimen page included a contemporary account of the capture of Andrew Barton's *Red Lion* in 1511, confirming the usual story in a general way, but with variations and additions which deserve notice. The entry is in Latin and the following is a somewhat free translation.

'A Scottish ship called the *Red Lion* and another small ship called *Ly Barke* captured.—In this year [1511] on the eve [of the feast] of St James the Apostle these ships were taken at sea by Lord John Howard by order of the King of England in a place called the Black Deep. Very many of the Scots were killed and very many wounded, most of them half dead and barely surviving. They were imprisoned in the Archbishop of York's house in London and marched there, according to many accounts, chained in pairs to the number of 140. Their captain was Robert Berton, commonly known as Hobbe a Berton. They were set at liberty about the 11th of December next following.'

The chief point of interest about this account is that it makes the action take place on 24 July in the Black Deep and not, as is usually said, on 2 August 'in the Downs' or 'off the Goodwins'. The later date was actually that of the arrival of the prizes at Blackwall, as appears in the extract from Holinshed given together with various contemporary references in the Introduction to Spont's *Letters and Papers relating to the War with France, 1512–3*. An earlier version appears in Charnock's *History of Naval Architecture* (Vol. 2, p. 34). It will be seen that the Butley chronicler writes of John Howard, whereas it should be either Edward or Thomas, but he does at least make it clear that the association of the Howard family with Barton's death is not, as Sir John Laughton suggested in the *D.N.B.*, a later addition to the story. In the same way there is a mistake as to which of the Barton brothers was concerned; it was not Robert, who was afterwards Lord High Treasurer of Scotland, but Andrew. These points were duly mentioned by Professor Dickens in his footnotes.

While on the subject of Andrew Barton it may be worth while to call attention to an extraordinary statement in the account of his life in the *D.N.B.*; not, by the way, one of those by Sir John Laughton. We are told that 'Barton's ship was brought in triumph to the Thames and became the second man-of-war in the English navy, the *Great Harry*, the earliest, having been built in 1504'. It would be hard to get further from the truth. The *Great Harry* was not built till 1514, and there were many English men-of-war before her date or that of the *Lion*. Even if, for some obscure reason, the Royal Navy is considered to have been created by Henry VIII, why should the *Regent*, *Sovereign*, *Mary Rose* and several other ships be ignored?

R. C. ANDERSON

LORD HOWARD AS A SEAMAN, 1578

It is frequently suggested that Lord Charles Howard's appointment as Lord High Admiral upon the death of the Earl of Lincoln in 1585 was not made in recognition of his qualities as a seaman. Seven years earlier Richard Hellowes had translated from the Spanish and published in London A. de Guevara's *Aguja de Marear y de sus Inventores* of 1539. Hellowes dedicated his translation to Lord Howard in recognition of his accomplishments as an experienced seaman, handy in all weathers and skilled in the art of navigation and of coastal pilotage. These accomplishments, he pointed out, were not usual to noblemen. There were, indeed, few competent English navigators from any rank of life at this time. Only three books on the art of navigation had so far been printed in English—Richard Eden's translation of Martin Cortes's *Arte de Nauegar* (written in 1545 and first published at Seville in 1551), *The Arte of Nauigation*, London, 1561, reprinted 1572; William Bourne's *An Almanack and Prognostication for iii yeres, with serten Rules of Navigation*, 1567 (no copy extant) reissued in 1571 as *An Almanacke and Prognostication for three yeares that is to saye for the yeare of our Lord, 1571, and 1572 & 1573, nowe newlye added unto my late Rulles of Navigation yt was printed iiii yeres past. Practised at Grauesend for the Meridian of London*; and, *A Regiment for the Sea*, London (? 1574), written and published by Bourne on the expiration of his declination tables in the *Almanacke* of 1571–3, the sixteen 'rules' of which formed the basis of this able manual.

The title of Hellowes's book and his dedication are given below, as extracted from *Censura Literaria*, Vol. III, p. 210 *et seq.* in the absence of the British Museum copy which was not available at the time.

A Booke of the Inuention of the Art of Nauigation, and of the greate trauelles which they passe that sail in gallies. Compiled by the famous Sir Anthonie of Gueuara, Bishop of Mondonnedo, Preacher, Chronicler and Counseller unto the Emperour Charles the Fift.

Dedicated by the said Author, vnto the famous Sir Francis de la Cobos, great Comptroller of Leon, and Counseller vnto the said Emperour Charles the Fift. Wherein are touched most excellent antiquities, and notable aduertisements for such as saile in gallies.

Imprinted at London for Ralph Newlessrie dwelling in Fleete Streate. Anno 1578.[1]

'To the Right Honourable the Lord Charles Howard, Baron of Effingham, and Knight of the most noble Order of the Garter: Edward Hellowes wisheth long life, with the fullnesse of all perfect felicitie.

'Right Noble,

'I not onely directed by the glorious Gueuara in this example, and the treatise which he dedicated vnto a noble man of Spaine, and in singular fauor with the Emperour Charles the Fifte; but also constreyned with the oppression and burthen of your bountie, wanting all other mean either of abilitie or facultie, to discouer my dutiful affection, with the more boldnes, not without regard of the mildnes of your humanitie, with an humble feare to be noted of mine owne parte, of some presumption, or want of due consideration of any imperfection of the matter, do present, respecting your age and honour annexed vnto the rare vertues of fortitude and temperance, with the experience of the sea and sea matters, with shippes and shipping, wherein approued trial, no lesse worthie credite, hath made knowne vnto all persons not insensible, your readines and aptnes in all weathers, to manure not only the meanest matters, as all maner of cordage and tackle within boord, namely sheat, halliard, bowline, tacke and helme, with such other, as also the vse and practice of the *Astrolobe*, *Balistilio*, *Carde*, and Compasse, but also the diligent search in knowledge, of all capes, forelands, shores, ports, creekes, hauens, races, tides, bankes and rockes: all which things although not usual to noble men, and yet most necessarie vnto all manner persons that haunteth the seas; expresseth kinde to be an assured guide, to yeld vnto your honour more expertnes than is common or easily obteyned, to be heyre and successour of Naptune's change and gouernement: this small treatise, (as a subiecte in nature) were it of worthiness sufficient, most due vnto your honour. . .'

'Your Honours
'Most humble to command,
'Edward Hellowes'

D. W. WATERS

EXPERIMENTAL ARCHAEOLOGY

In 1909 the late Leonard Laughton and I made an experiment of a kind I have always wished the S.N.R. could undertake. We had neither of us been to sea in a square rig, so tried to fill a little, a very little admittedly, of the gap in our experience.

Laughton had a 14-foot boat which had been a Deal lugger's punt. We rigged her with a brig's topsails, jib and boom-mainsail. She had fidded topmasts. The proportions of her topsails were from Steele's *Seamanship*. The records of dimensions of sails and spars is lost, but she was by no means jury rigged. She was fitted out at Hole Haven, rather hastily, so as to be in time to visit the Fleet which was to lie off Southend in July.

With a wind of not less than force 2 she could be relied upon to stay. We practised staying, wearing, heaving to, boxhauling and backing and filling. She was almost too good at the last; being so light she gathered sternway quickly. Once in a respectable breeze in which small craft were reefed we stayed under topsails only. She went astern at a rate that might have been dangerous. This emboldened us to dash into a small dock at Leigh with only just room to round to. We flung both topsails aback and she stopped dead.

On 17 July our sailing partner Dudley Stone joined and took photographs. Then he came on board and we stood out of the Haven, and with a light south-westerly wind and a strong ebb under us bore up for Southend.

1 A small quarto, not paged, and has only the printer's marks.

We struck our topsails to each man of war we passed and felt rather embarrassed when ensigns were politely dipped.

The day ended a trifle ignominiously. The ebb seemed to run for ever, the wind failed and we struggled under oars and Southend pier till at last the flood came and we crept up Leigh creek in the dark.

In 1920 a film company wanted to show a seventeenth-century merchantman being chased by a pirate. J. T. Major who had retired from the Greenwich Museum rigged the two boats, 15 ft. and 14 ft. The pirate was rigged correctly as a seventeenth-century ship. She never set topgallant sails but did carry her spritsail and spritsail topsail. The other craft which we called the barque had no spritsail topsail or mizen topsail. Laughton, I and others had two or three days' useful experience if not at sea at any rate in Sea Reach. Did a ship with spritsail topmast ever before back her main topsail to wait for a tug?

In 1928 I rigged a leaky half-decked boat (15 ft. 6 in. × 5 ft. 6 in.) as a brigantine. She had jib, fore topsail and course and gaff mainsail. The experiment was abortive and though she was sailed in the Adur and the canal at Shoreham she never got to sea. Her square canvas and mainsail and their spars, except the main boom which was broken against the middle pier at Shoreham, I have still, and if they could be used should be pleased to present them to the Society or the Museum. We might have a lovely eighteenth-century ketch.

ALAN MOORE

QUERIES

35. (1955.) POMPON. What is the origin of the custom in the French Navy of sailors wearing a red pompon on top of their blue berets?

EDGAR K. THOMPSON

36. (1955.) BELLY AND FOOT. In Vol. 7, 8th Series, *Notes and Queries*, p. 329, I ran across the following unfamiliar nautical term: 'The R^{t} Hon^{ble} Comp^{as} concernes was brought back (by a vessel from Achin) in Rubarb and Benjamin in *belly and foot*'. Italics are my own. Nautical sources are silent on this expression. Can any reader contribute an explanation?

EDGAR K. THOMPSON

37. (1955). WHITE STOCKING DAY. This is an old time sailor's phrase for pay-day on coming in from a voyage. Is there any reason for it?

EDGAR K. THOMPSON

38. (1955.) TO PAINT THE LION. I recently ran across the following nautical expression in *The Wonderful Magazine*, Vol. 2, p. 237, published in 1794: 'This day a woman going on some occasion on board a ship in the river, some of the crew took it in their heads to paint the lion, as they called it; which was performed by stripping the woman quite naked, and smearing her over with tar, and in that manner threw her into the river, where she was nearly drowned.' Smyth and other dictionaries are silent on this expression. Can any reader lend a hand?

EDGAR K. THOMPSON

39. (1955.) MESS CROCKERY. Letters have appeared in *Country Life* recently on the subject of patterned crockery used in broadside messes of (smart) men of war in the middle of the last century.

In *The Mariner's Mirror* of September 1920 Admiral Sir Cyprian Bridge (who entered the Navy in 1853) answered a query on the same subject, but he did not give any definite dates when the messes ceased buying such private gear.

If any senior officer can state when he last served in a ship in which broadside messes used their private patterned crockery it would be well worth placing on record.

It would also be interesting to know the date of the Admiralty first issuing crockery, and the date at which private patterned crockery was officially forbidden.

K. M. FARDELL

40. (1955.) ANCHOR GEAR. A friend who has made a very fine model of the *Elizabeth Jonas* of 1598 asks for information as to how the anchors of that date were got into position for stowing

He assumes that the tackle from the cat-head was hooked on to the ring of the anchor, when once it was clear of the water, and that another tackle from the fore-yard was hooked to a strop round the crown; but he can find no authority for this. Is this what was done and, if so, was the strop a permanent fitting such as might be used for an anchor buoy? H. PHIBBS

41. (1955). MIZEN RIGGING. Another question relating to the model of the *Elizabeth Jonas* is this. How were lateen mizens handled when the ship tacked or wore? It hardly seems feasible to dip the whole yard and sail round the mast. H. PHIBBS

42. (1955.) TANK FOR TESTING MODELS. Can any member provide further information about the experimental tank for testing models, said to have been constructed by William Henry Bentinck, 4th Duke of Portland, at Troon, in the early nineteenth century? H. G. OWEN

43. (1955.) THE FAMILY OF LAMPEN. Can any reader of *The Mariner's Mirror* supply information concerning four members of the Cornish family of Lampen who served in the R.N. or R.M. between 1800 and 1870? This family goes back to about 1450, and appears in Colonel Vivian's *Visitations of the County of Cornwall* (detailed pedigree of the senior from 1530 to 1685); but there is some difficulty in tracing the actions of the later generations as there were in succession nine John Lampens, the 8th of whom had five brothers. A. M. DUDLEY LAMDEN

44. (1955.) EVOLUTION OF THE KNÖRR. Could Mr G. J. Marcus supplement his interesting article in the May *M.M.* with some figures? He gives us proportions. Figures would almost complete the picture. How many oars had the Kvalsund craft, the Gokstad ship and the knörr respectively? What were their lengths on the keel and overall, their beam and depth? How many strakes had they? How long, wide and thick were their planks? Were they joined at the butt ends?

ALAN MOORE

45. (1955.) SHIP *LINTIN*. I am trying to find any record or details of a British merchant vessel named the *Lintin*, which was built in Sunderland in 1834, and whose home port was said to have been Liverpool.

Thanking you for any assistance you may be able to give me in this direction; the material is needed in order to furnish a short account that is to accompany a coloured print of this vessel.

THOMAS HORNSBY

46. (1955). NAUTICAL DAY AND ASTRONOMICAL DAY. Until 1805 the nautical day began at noon, 12 hours *before* the civil day; whereas the astronomical day also begins at noon, but 12 hours *after* the civil day. Thus the civil date agrees with the astronomical date from noon to midnight and with the nautical date from midnight to noon, but these two never agree with one another.

When astronomers went afloat, for instance in Cook's voyage to Tahiti in 1769, this must at least have given rise to comment, if not to misunderstanding. It would be interesting to know if there is any record of this. R. C. ANDERSON

ANSWERS

3. (1929.) CUTTER-BRIG. A square-rigged vessel with a jigger and a fore and aft mainsail. (*American Naval Encyclopaedia*, 1881.) A. MACDERMOTT

6. (1955). UNIFORM IN 1803. The Handels- og Søfartsmuseum at Kronborg, Elsinore, has tried to trace the mentioned uniform from about 1807, both through the local authorities and through the press, but so far without result. No one seems to have heard about such a uniform, worn by a farmer (or fisherman) at Hvide Sande in Western Jutland. HENNING HENNINGSEN

14. (1955). THAMES-MEDWAY CANAL. Although on the map the Thames-Medway Canal appeared to save a considerable distance on the passage from Gravesend to Strood, it did not afford any saving in time.

The height of the tunnel and the depth and width of the waterway restricted its use to small craft with lowering masts. Sailing barges were really the only type of craft which could make use of it. In the absence of steam tugs, I imagine that lighters or dumb barges were seldom employed so far down the Thames. It would only be possible to enter or leave the canal through the locks at each end for an hour or so before and after high water, so that the passage from Gravesend to Strood or vice versa must take not less than 12 hours. Except in the most adverse weather conditions, a sailing barge leaving Gravesend at high water can easily get down the Thames to the Jenkin or Grain Spit Buoy on one ebb tide and then, taking the following flood tide up the Medway, reach Strood at the next high water. If she does the passage by canal she will take just as long and in addition have to pay the canal dues and the cost of a horse and driver to tow her through.

In fact, the canal was of no practical use to anybody and should never have been built. The directors and shareholders were probably very glad when the South Eastern Railway offered to buy them out.

H. C. WILLIS

14. (1955.) Thames-Medway Canal. The obituary notice of William Tierney Clark (*Proc. Inst. C.E.* vol. XII) provides the answer sought by Mr Woodward: 'The first public work upon which he was actively engaged was the Thames and Medway Canal, which presented considerable difficulties of execution, particularly in the tunnel between Gravesend and Rochester; these were, however, successfully overcome and the canal proved of essential service in shortening the navigation until in 1844 a line of rails was laid on a timber viaduct, partly covering the canal through the tunnel, and eventually the channel was filled up and appropriated for the rails on which the rapid locomotive superseded the sluggish canal-boat.'

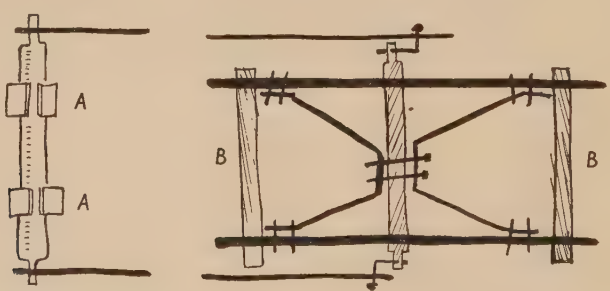
C. E. C. TOWNSEND

16. (1955.) Polacres. Every authority I know that describes a polacre, mentions the peculiarity of having no footropes on the topsail yard. I cannot speak from personal observation of the Mediterranean polacres, but the English polakers sailing out of Bideford certainly had no footropes on their topsail yards.

A. MACDERMOTT

27. (1955.) Paddle-wheel craft in China. When the first paddle steamer to reach China, the *Forbes*, arrived at Macao in 1830, the Chinese pilot betrayed no astonishment whatever. 'These have been in use in China for hundreds of years', he said laconically.

And he was right. Although the Chinese do not claim to have invented steamers they can with justice claim to have invented paddle wheels. The first use of them is attributed to a skilful general named Li Kao who lived in the sixth century. Of him it is recorded that he built fighting ships 'with two wheels on both sides so that the boats ran as fast as horses'.



Later, in the Sung Dynasty, a rebel general, named Yang Yao, used paddle-wheel boats in the Tung Ting Lake, without much success, it would appear, for he was up against that clever general Yo Fei who threw down bamboo mats ahead of the paddlers and brought them to a standstill.

In the early part of this century passenger-carrying paddle-wheel craft were in general use on the Soochow creeks and also in the Canton area. The motive power was provided by a machine like a treadmill situated at the stern and worked by from six to twenty men at a time.

The arrangement, although very crude, was quite ingenious and would have delighted the heart of Mr Heath Robinson. When the wind was fair a large lug sail was hoisted.

It is many years since I saw these craft in use but I have found a rough sketch in my Field Book showing the method of connecting the wooden pedals, marked *A*, on which the operators stood, and the stern paddle wheel, marked *B*.

There is a model of this type of junk in the Scheepvaart Museum at Antwerp. It was made by the Chinese Maritime Customs for one of the Fishery Exhibitions. A reproduction of this model is to be seen in Vol. 2 of that admirable book *Navires et marins de la rame à l'helice*, written by our member Commandant L. G. la Roërie.

These interesting craft were put out of business by the famous 'Boat Trains', that is to say small steam launches towing as many as five dumb lighters in a long string with sampans to take the overflow made fast astern of the tow. G. R. G. WORCESTER

27. (1955.) PADDLE-WHEEL CRAFT IN CHINA. Stern wheel paddle craft were fairly common in the Canton delta up to 1909: usually from 10 to 15 coolies operated the treadmill which was probably geared to increase the speed of the paddle, the slats of which were, as far as I can remember, only about 10 inches wide.

I once saw one of these junks negotiate the first cataract on the West river. She worked up on the east side in the back wash until the crew were able to pick up a bamboo float which was secured by a coir rope to a substantial mooring; this was brought to a capstan and the junk hove up to the next bamboo float and so on until the rapids were passed. I should say that in calm weather a speed of 4 knots was about the limit. I. A. EDGELL

REVIEWS

THE BRITISH FLAG. By A. SWINSCOE. Glasgow: Brown, Son and Ferguson Ltd. 1954. 8 × 6½ *inches*; 20 *pages*; 30 *illustrations in colour*. Price 3*s*. 6*d*. net.

This is a pamphlet of only twenty pages, and perhaps its price may be considered rather high unless the cost of printing flags in three colours goes some way to explain it. The author certainly knows what he is writing about, and the work, as is claimed for it, serves well to answer the 'how, when and why' of the origins of our national flags. The three ensigns of Her Majesty's Fleet, the Red, the White and the Blue, are put in their proper perspective, and anything is to the good that helps to dispel the absurd modern obsession that the Royal Navy never had any other ensign than the White. The author states, however, that from 1794 the White Ensign was usually worn by His Majesty's ships; this is not the case, and although the battles of the Nile and Trafalgar were fought under the White Ensign, those of Cape St Vincent, Camperdown and Copenhagen were not. Any squadron not specifically under the command of a flag-officer of the White or Blue, and all detached ships continued to wear the Red Ensign of His or Her Majesty's Fleet right up to 1864, and one has only to walk around the galleries of the National Maritime Museum and glance at the pictures of British men-of-war to observe that this is so. The author seems to belong to that section of the community which is not sure whether the egg or the chicken came first, or in other words, did the jackstaff give rise to the Union Jack or vice versa? Surely it is well known by now that the jackstaff was introduced to accommodate the jack. Apart from these small criticisms this latest addition to the subject of British flags can be recommended as a reliable and very useful concentrated guide. H. P. MEAD

The Mathematical Practitioners of Tudor and Stuart England. By E. G. R. Taylor. Cambridge: The University Press; for the Institute of Navigation. 1954. $8\frac{1}{2} \times 5\frac{1}{2}$ *inches*; xi + 442 *pages*; 12 *plates, map and facsimile*. Price 55*s*.

On 11 July 1662 Samuel Pepys, Clerk of the Acts of the King's Ships, wrote in his diary: 'Up by four o'clock, and hard at my multiplication table, which I am now almost master of'. Placed in a position of responsibility for naval affairs, Pepys had become aware that the study of mathematics lay behind the practice of navigation and of the 'useful arts' which supplied the seaman with his tools and training. He saw too that (in the words of a contemporary quoted by Professor Taylor) 'the great affairs of Navigation, the Military Art, etc,' were 'carry'd on and managed by those who are not great Mathematicians: as Seamen, Engineers, Surveyors, Gaugers, Clock-makers, Glass-grinders, etc.'. Pepys learnt his mathematics at the age of 29 from Mr Cooper, master of a King's ship; and his experience showed that the teaching of mathematics in the seventeenth century, which found no place in the curriculum of grammar school or university, but was available from 'a class of stop-gap teachers'—practical men who passed on to others the mathematical rudiments as well as their technical experience in instrument-making, survey, navigation and other branches of applied mathematics.

These mathematical practitioners are the subject of Professor Taylor's book, which she describes as 'a chronicle of lesser men . . . but for whom great scientists would always remain sterile in their generation'. It is divided into three sections: a long narrative introduction (for readers 'with more general interests'), a chronological list of the mathematical practitioners with biographical notes, and a chronological list of works 'on the mathematical arts and practices'.

As will be expected by those who to their profit use her earlier books on Tudor and Stuart geography, Professor Taylor not only handles her extensive source material with perfect mastery but also describes the promulgation and diffusion of ideas with a sensitive appreciation of the social and personal relationships by which it was accomplished. In the period covered by her book, nautical science in England was groping, along empirical and experimental paths, towards the solution of its problems. The reduction of error in instruments and in their use, the improvement of navigation tables, attacks (from various directions) on the problems of the variation and the longitude, the development of charts and realization of their use and limitations—these are recurring themes in the author's introduction. Behind them, as a check on progress, lay the traditional dichotomy between theory and practice, resulting from mutual mistrust between 'thinking men within doors' and 'Tarpawlins, tho' of never so great experience'. Before the establishment of regular institutions for teaching and research in the mathematical and astronomical sciences subserving the art of navigation, the transmission of knowledge was effected in a copious literature of pamphlets, almanacks, and text-books (chronicled in Professor Taylor's list of works), and in the places of resort frequented by the practitioners. London is the main scene of Professor Taylor's story, in which the centres of academic learning play only a secondary part. Here in London, and particularly in the alleys of Wapping and Ratcliff and in the streets about the Tower, the Royal Exchange and St Paul's, lay the little shops of the seventeenth-century craftsmen and printer-stationers who served the needs of seamen. To the houses of such instrument-makers as Elias Allen or John Seller and of the sellers of charts, navigation tables and nautical books like John Tapp or John Thornton came not only seamen and other practitioners, but also mathematicians and experimental scientists of the type of Sir Jonas Moore and Robert Hooke. The author's biographical list records all such professional addresses and they are suggestively plotted in her map of the workplaces of the practitioners.

In her later chapters Professor Taylor describes the different climate which prevailed after the Restoration. Social and political circumstances favoured the co-ordination of intellectual effort exemplified in the incorporation of the Royal Society (1662), the establishment of the Mathematical School at Christ's Hospital (1672), and the foundation of the Royal Observatory. 'On 30 June [1675] Moore and Hooke, accompanied by the nineteen-year-old Edmund Halley, went

down to Greenwich Park and selected a site on the green knoll overlooking the river where the old Observatory still stands'. Scientists and mathematicians like Hooke, Flamsteed and Halley (the last two of whom, it may be noted, were self-taught) no longer depended on personal patronage or private practice but held public appointments in which they were encouraged and equipped to pursue their experimental work.

Professor Taylor's book brilliantly illuminates a little-known corner in the history of science and a class of workmen to whom the words of Mercator's panegyrist might be applied—'ingenio dexter, dexter et ipse manu'. A short review cannot do justice to the wealth of the author's material or the range of her reference. Her list of works is the first bibliography of a literature which, being fugitive and subject to hard use, is to-day scarce and difficult to come by; ungenerous as it may seem to ask for more, we must however regret that the location of manuscripts is not regularly given. The biographical list brings together an immense variety of detail about the practitioners, their houses and activities, the stock of their shops, the instruments, books and charts which they made or sold, and their connexions. Professor Taylor—perhaps rashly—claims that her list is 'unselective', and it admits a few names whose qualifications in this context are doubtful; on the other hand, it could have been amplified by the inclusion of others who style themselves 'Practitioner in Mathematicks' (or the like) in signing their estate maps or charts. It must be said that the index is not very helpful. Professor Taylor's book is of the liveliest interest and of lasting value, and few scholars carry their learning so lightly or could have produced so readable a reference book.

R. A. SKELTON

THE STORY OF MILFORD. By J. F. REES. Published by the University of Wales Press. $5\frac{3}{4} \times 8\frac{3}{4}$ *inches*; 149 *pages*. Price 8*s*. 6*d*.

A very scholarly work, this, as is only to be expected when it is noted who is the author. A book full of notes and references and, therefore, a volume of great use to anyone who wishes to go further into the history of Milford, Milford Haven and the surrounding district.

Milford, as the older inhabitants prefer to call the town and not Milford Haven, though the Urban District Council apparently consider that they are the Council of Milford Haven according to the caption on their seal, which is reproduced on the dust cover, but that, by the way, is only about 150 years old, having been founded to all intents and purposes at the instigation of Sir William Hamilton, the husband of Nelson's Emma. Sir William was a big local landowner and gave the management of his estate to his nephew Charles Francis Greville and it was this nephew who was the driving force that got the town really under way.

As this was the time of the Napoleonic Wars it was thought that the splendid harbour made by the Haven would attract the attention of the Admiralty if docks and dockyards were built and that the district would become to the West Coast what Portsmouth and Devonport were to the Channel. It is true that several warships were built from 1804 to 1814 at the Milford Dockyard, but after that nothing much more.

Then came the idea that Milford should become the port for the United States and cut out Liverpool, but this scheme failed, largely owing to the isolated position of the place.

The whole history of this town seems to have been full of constantly rising hopes of greatness only to have them dashed to the ground just as there seemed to be some chance of their coming to fruition. Neither the great dockyard scheme for the Royal Navy nor the trans-Atlantic packet station ever really got beyond a trial run, but for something like 100 years idea after idea was put forward by the Greville family and their successors to try and attract the United States trade and get at least some of the Liverpool ships to come to Milford.

Finally, in spite of little help locally, it was the somewhat despised fishing industry that saved Milford from slipping back to the little village it had been at the end of the eighteenth century.

Now-a-days £150,000 worth of fish is landed annually at Milford and it does seem that at last the place has found its true vocation and that the local powers that be realize this and are doing their best to keep this valuable trade.

Though not primarily a maritime book, from the very nature of the place whose history is being related it is one which will hold the attention of anyone who is interested in any form of nautical history. The illustrations are very good and it is a very well-produced work as one would expect seeing that it is published by the University of Wales Press; this also accounts presumably for the extremely moderate price that is being asked for this very excellent volume. H. O. HILL

THE PAINTED MEN. By T. C. LETHBRIDGE. Melrose. 1954. 208 *pages*; 15 *plates*, 19 *figures and end-paper maps*. Price 16*s*.

This book sets out to give an account of the Picts, whom the author considers, among other things, to have been the builders of the brochs and wheelhouses of Northern Scotland. When the Picts are described from the archaeological viewpoint alone, the past is well evoked. Unfortunately, what was potentially a good account of a little-treated subject is spoiled in several ways. Although a good and imaginative archaeologist, Mr Lethbridge does not do so well as an historian. His résumé of the Roman conquest and occupation of Britain is occasionally slightly misleading at the beginning and becomes increasingly conjectural as it nears the end. Some of the suppositions may in time prove to be true, but the euhemerism of chapter 5 is hard to swallow. To take the Picts from the Balkans to Scotland via Ireland demands more substantial proof than a similarity of names after translation and a common liking for living on middens and blowing the bagpipes. A thing that irritated the reviewer was a sort of 'archaeological jingoism' wherein the rugged and martial virtues of present-day Scots were traced back to the Picts with metaphorical hurrahs.

Readers of *The Mariner's Mirror* will be interested to know that some of the material for the book was gathered in the course of field-work based on the author's 36-foot boat. Some may be inspired to visit the places described as haunts of the Picts, or named in chapter 8 as possible itineraries of Roman naval detachments. They will also be interested in the estimates of the size and nature of the Roman patrol fleets and the Pictish 'navies'.

This book can be recommended as entertaining reading—the reviewer enjoyed it—but it is not scholarly. M. A. BENNET-CLARK

THE SHEET ANCHOR, THE JOURNAL OF THE WEMBLEY SHIP MODEL SOCIETY, VOL. 3, NO. 1. Edited by W. Majer. London: $10\frac{1}{2} \times 8\frac{1}{4}$ *inches*; 54 *pages*, *illustrated*.

This is the 7th number of the Journal of the Wembley Ship Model Society, which was started some years ago under the Editorship of our member Mr W. Majer. Although it is primarily of interest to the large and still growing band of model makers there are several very important articles dealing with a varied number of craft from an archaeological point of view.

Those who are not interested in model making, can, nevertheless, derive considerable advantages from the Society by becoming Corresponding Members, at an annual subscription of 7*s*. 6*d*. which includes the *Journal* issued three times annually. G. R. G. WORCESTER

Vol. 10 onwards at 10*s*. 6*d*. each (postage 5*d*.). The index will be supplied free to purchasers of a complete volume or sold separately for 2*s*. each.

Details of back numbers available will be supplied on request. (Published by the Cambridge University Press, 200 Euston Road, London, N.W. 1.)

The following other publications of the Society are at present available for sale:

OCCASIONAL PUBLICATIONS: No. 5, *Lists of Men-of-War*, 1650–1700. *Part I. English Ships.* Compiled by R. C. Anderson. *Part II. French Ships.* Compiled by Pierre Le Conte. *Part III. Swedish Ships.* Compiled by Hj. Börjeson. *Danish-Norwegian Ships.* Compiled by P. Holck. *German Ships.* Compiled by W. Vogel and H. Szymanski. *Part IV. Ships of the United Netherlands.* Compiled by A. Vreugdenhil. *Part V. Indexes.* EACH PART 2*s*. 6*d*. (POSTAGE 2*d*.)

REPRINTS: *The Rye River Barges*, by Leopold A. Vidler.
East Cornish Luggers, by H. O. Hill.
The Fishing Luggers of Hastings, Parts I and II (separately), by James Hornell.
The World's First Clipper, by Boyd Cable.
The Monuments in the Church of St Nicholas, Deptford, by John Summerson.
The North Ferriby Boats, by E. V. Wright and C. W. Wright.
The Battle of Trafalgar, by Rear-Admiral A. H. Taylor. Price 5*s*.

MARITIME MISCELLANY SERIES, No. 1, *The Van de Veldes*, by W. Voorbeytel Cannenburg.
No. 2, *Piracy*, by Philip Gosse. Price 2*s*.
No. 3, *The Anchor*, by J. W. van Nouhuys.
No. 4, *Old Maritime Prints*, by A. G. H. Macpherson.
No. 5, *The Timber Problem of the Royal Navy*, 1652–1862, by Robert G. Albion. Price 2*s*.
No. 6, *The Fighting Ship from* 1860 *to* 1890, by Admiral G. A. Ballard.
No. 7, *The King's Flags*, by Cecil King.
No. 8, *The History of Maritime Law*, by William Senior. Price 2*s*.
No. 9, *The Development of Signalling in the Royal Navy*, by Captain L. E. Holland, R.N.

(Each, price 2*s*. 6*d*. except where otherwise stated.)

PLANS: Model-maker's Plans of the *Victory*, 10 plans on 3 sheets from those used in the restoration of 1923–35. (Price 21*s*.)

Enquiries for any of these should be addressed to The Hon. Secretary, Society for Nautical Research, National Maritime Museum, Greenwich, S.E. 10.

THE SOCIETY FOR NAUTICAL RESEARCH

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